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News

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JANUARY, 1949 — 50c per Copy

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Model RC 60



Model CC 20



Model PC 20



Model RC 40

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CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

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Headquarters for all types of cylinders, Pressed Steel Tank Company assures you the *right* cylinder for your requirements. The RC 100 is the most popular cylinder in the industry. Like all Hackney L-P Gas Cylinders, it assures you advantages that provide *repeated economies*.

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- ★ Model RC 60 is 12" I.D. by 39" high (excluding height of cap). It can be charged with 60 lbs. Propane or 72 lbs. Butane.
- ★ Model RC 40 is 12" I.D. by 28" high (excluding height of cap). Has 40 lb. Propane capacity or 48 lb. Butane capacity.
- ★ Model CC 20 is a 20-lb. capacity cylinder for small domestic installations, cottages, etc. (cash and carry type).
- ★ Model PC 20 is another 20-lb. cylinder. It is used for industrial applications, demonstration purposes, small domestic installations.

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Pressed Steel Tank Company

Manufacturers of Hackney Products

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JANUARY—1949



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LETTERS	29
COMMENT	33
BEYOND THE MAINS.....Ed Titus	35
INDUSTRY SOARS TO NEW HEIGHTS IN 1948..K. W. Rugh and E. O. Mattocks	39
MICHIGAN FOUNDRY HAS NO "DOWN TIME" AFTER LP-GAS REPLACES NATURAL.....C. S. Flynn	47
CARRYING THE WONDERS OF LP-GAS TO THE DOOR SELLS ENGLISH HOUSEWIFE	53
UNATTENDED CENTRAL OFFICES OF TELEPHONE COMPANY HAVE AUTOMATICALLY CONTROLLED PROPANE HEATERS.....Ed Titus	57
IT'S HARD TO BALANCE A DESERT LOAD.....	63
FUNDAMENTALS OF SAFETY.....Jay F. Sensenich	64
CYLINDER ROOM HARD TO FIND IN OLD MINING CAMP Paul W. Hower, Jr.	71
WHAT UNIFORM MONTHLY DELIVERIES WOULD DO TO BALANCE LOAD	73
SNOW IS NO PROBLEM HERE.....	75
TRAINING COURSES PROVIDED FOR TEXAS SERVICE MEN Paul J. Phillips	76
KOKOMO STANDBY NOW READY FOR HARD WINTER.....J. R. Strother	81
SPECIAL PROBLEMS FOLLOW CONVERSIONS.....	84
DELIVERING GAS BY TANK TRUCK.....H. M. Hone	96
ASSOCIATIONS	104
CALENDAR	118
COMPETITION OUTBID	120
POWER: NEW DYNAMOMETER CAN TEST ENGINES OF 500 HORSEPOWER	124
HAD TO PROVE FUEL IN EARLY-DAY SELLING.....	128
PRODUCTS	138
THE TRADE	152
CLASSIFIED	173
ADVERTISERS	176

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January 1949

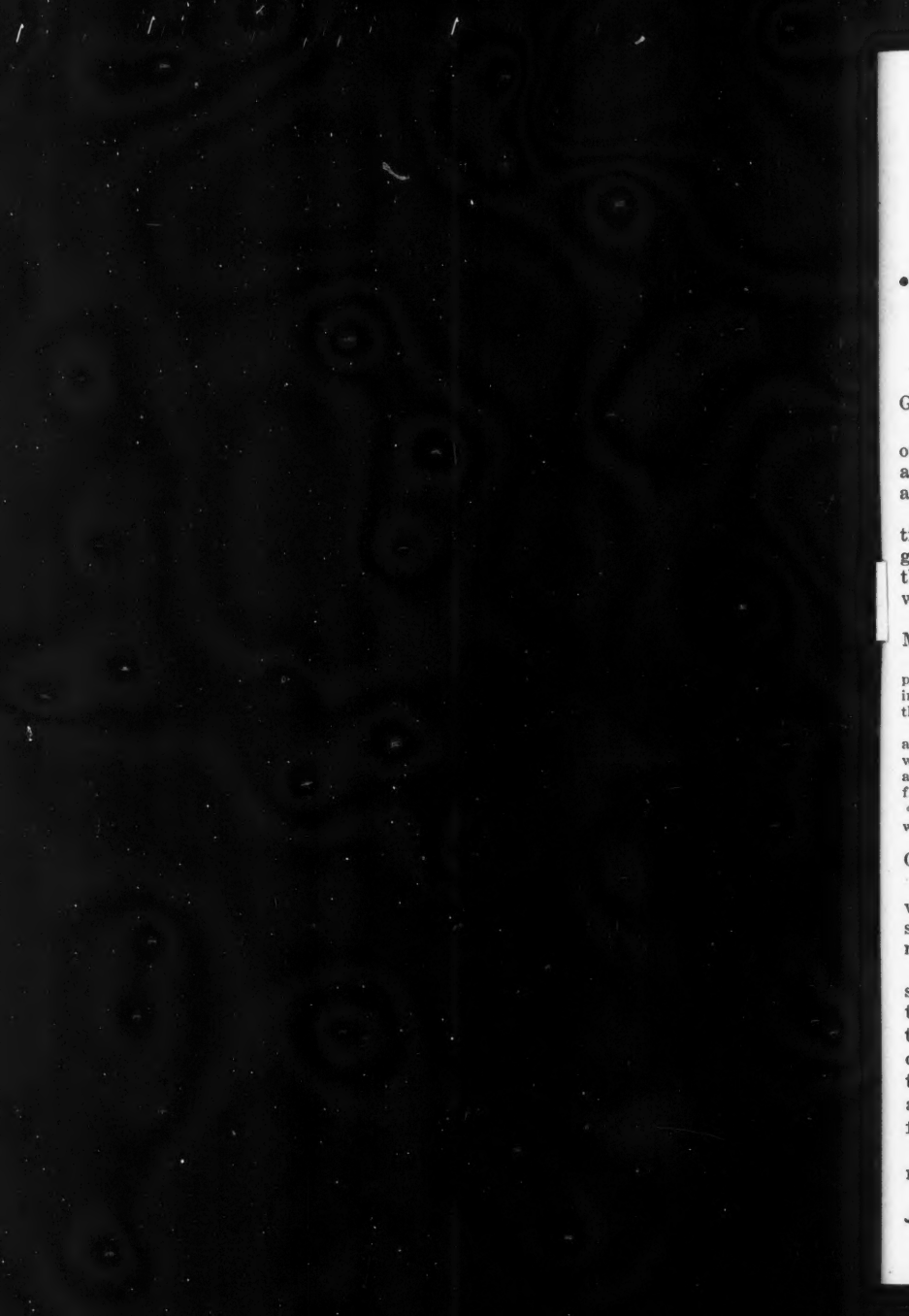
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LETTERS

●BUTANE-PROPANE News welcomes letters from our readers, but it must be understood that this magazine does not necessarily concur in opinions expressed by them.—Editor.

Gentlemen:

We are interested in the possibility of storing LP-Gas in lengths of standard 26-inch pipe, both underground and aboveground.

We should appreciate any information you can give us as to the cost per gallon of such installations, where they have been employed, and the wall thickness of pipe required.

M. F. K.

Massachusetts

Natural gas is being stored in underground pipe holders at relatively high pressures and in many cases the economics are favorable to this type of installation.

If propane is to be stored, the highest operating pressures will be below 200 psig, which will call for light weight pipe if the state authorities will allow you to use the manufacturers' or the ASTM pressure rating.

• If ASME code is the governing factor, the wall thickness will be much greater.—Ed.

Gentlemen:

In the city gas mains of our town we distribute butane-air gas, 535 Btu, s.g. 1.16 regulated to 6" w.c. for domestic appliances.

A discussion has arisen among the service men concerning the installation of automatic shutoff valves in the gas line feeding the oven burners of domestic and restaurant ranges that have been in use for a few years and that were not CP equipped at the factory.

What is your advice and recommendation as to:

Installing automatic oven lighting and/or automatic shutoffs on domestic or restaurant ranges not factory equipped with such.

We are cognizant of the problems of piping and manifolding to bypass the top burners and the problem of the throttling effect of the oven temperature control. We are interested if it is good practice from the safety angle.

O. H. R.

Wisconsin

Automatic oven pilots have not been sanctioned by the American Gas Association for liquefied petroleum gas until just recently, due to difficulty in manufacturing a pilot that was satisfactory.

This should not be as serious with 550 Btu gas as your orifices are much larger.

We see no reason why you should not make the necessary additions to the older equipment as long as you include 100 per cent automatic cutoffs.—Ed.

Gentlemen:

Will you please give the advantages and disadvantages of two-stage regulation versus single stage regulation used with single tank bulk propane systems with temperatures as low as zero °F? First stage (H.P. regulator) @ 10 psi outlet setting—second stage (L.P. regulator) @ 11 in. H₂O. Will two-stage regulator help eliminate freeze ups?

Will it also make it permissible to use 3/8 in. copper from H.P. regulator at storage tank to L.P. regulator at building or appliance? Is it advisable to use two-stage regulator on loads of 100,000 Btu per hour and up?

Will placing the low pressure regulator on the inside wall of basement (piping vent back outside) help elim-

inate freezing and is this permissible if inlet pressure is not over 10 lbs.?

G. S.

Michigan

The regulator manufacturers have endeavored to manufacture a line of regulators to take care of the various requirements of the liquefied petroleum gas industry. There are a number of makes and a number of sizes and types available.

It is extremely difficult to design into a regulator the ability to reduce the pressure with a variable upstream ranging from 200 psig down to a few pounds, a varying load factor and still hold a nearly constant downstream pressure.

A remarkable job has been done by the manufacturers but the selection of the proper equipment for the individual job by many dealers has been rather haphazard and many of their service complaints can be traced back to improper selection and installation of regulators.

Two stage reduction makes the job for the low pressure regulator easier but there must be some volume of gas in the system between the HP and LP regulators to prevent uneven intermediate pressures due to the regulators getting into step.

There are no hard and fast rules as to when two stage reduction is needed but we believe if you will state your operating requirements to your regulator supplier, he will come forth with a recommendation for a satisfactory installation.

Location of the low pressure regulator out of the weather will help eliminate freeze up.

Orifice size in the regulator is another factor in freeze ups. Moisture removal equipment might be advisable in your lines to the regulators.—Ed.

Gentlemen:

We have had several discussions of late on regulators and checking their pressures. We have found the pressure of most regulators just beyond the outlet to be 13½ inches. And we also find that after turning on the oven and two burners that the pressure reads 11 inches. We realize the recommended pressure drop is .5 inches. Are we using the wrong method? The ranges seem to be giving satisfaction. We have also found that the recommended tubing size is larger than necessary to give good performance.

We have been making runs of 50 feet with ½-in. O.D. copper tube on a range and water heater installation totaling 86,000 Btu input and they are operating satisfactorily.

Are we making a mistake? If we are, the correct information will help us as well as several other companies, as we have found them to be doing the same as we.

H. C. V.

Washington

The experience of most LP-Gas operators is that a properly sized regulator and yard and house lines of ample size pay out in the long run.

The difference in cost of the installation is easily eaten up by one or two service calls due to pressure fluctuation or freeze-up.

Pressure variations are not too noticeable on top burners or water heater burners but do cause trouble with pilots, oven burners and refrigerators.

The difference between lock-up and operating pressure of 2½ in. is more than is usually experienced when using the proper size regulator and line. The ½-in. OD copper tube you are using on this job is on the edge and allows for no additional equipment to be used without increasing line size. We would have used ¾-in. OD tubing in this installation.—Ed.

Gentlemen:

I would appreciate your sending me a copy of NBFU pamphlet No. 58 on maximum filling density. We have a 30,000 gallon tank and would like to establish the amount of propane liquid that can safely be stored. This pamphlet is described on page 74 of your June, 1948, issue of BUTANE-PROPANE News.

I would also like any information on burning of propane gas using atmospheric burners as to adjustment and air-gas ratio.

J. A. S.

Michigan

A copy of NBFU Pamphlet No. 58 may be obtained free of charge by writing to the National Board of Fire Underwriters at 222 West Adams Street, Chicago.

On Page 32 of the "Handbook Butane-Propane Gases," which we publish, you can

find the combustion characteristics of the common hydrocarbon gases.

On atmospheric burners, part of the air is taken through the venturi as primary air and the balance is supplied from the atmosphere around the burner.

For industrial installations, there are many types of burners for various uses, including pre-mix burners when gas and air are mixed before entering the burner.

The "Handbook" and "The Bottled Gas Manual" have considerable information on burners and additional information can be obtained from the various manufacturers advertising in BUTANE-PROPANE News.—Ed.

Gentlemen:

Has there ever been any research done on the possibility of injecting butane directly into the cylinder of an engine as is done in the diesel engine?

Cooling is done by the water jacket and more recently by water injection in order to get better and more complete combustion. Why not let the butane remove some of the heat as it vaporizes in the cylinder?

Direct injection would also eliminate carburetion, vaporization, and regulation problems now involved in the use of butane gas as an internal combustion engine.

B.W.L.

Arkansas

We know of no commercial application of liquid injection of liquefied petroleum gas for engine fuel. There has been some experimentation done by individuals but we have no record of their work.

The theoretical gain in efficiency, unless a very simple injection method could be devised, would probably be offset by the cost and maintenance of a liquid injection system if it would have to be in the order of the present diesel engine equipment.—Ed.

Gentlemen:

We are very much concerned about the tanks which we are selling, to be used later by the farmers in filling their tractor tanks. The tanks that we are selling are equipped with regular $\frac{3}{4}$ " ICC valves.

The orifice in these valves is very small. What we want to know is, do the hundreds of farmers in California who use LP-Gas on their tractors take the fuel out of their tank with the small ICC valve or do they have a large $\frac{3}{4}$ " outlet valve for tractors?

R. B.

Texas

Most all of the tractor tanks used in this area are equipped with $1\frac{1}{4}$ inch fill valves and $\frac{3}{4}$ inch vapor return valves.

Skid tanks and trap wagon tanks used to fuel the tractors are equipped with the same size or larger outlet valves and many use pumps for transfer of the liquid.

We know of no operators using the small ICC valves for tractor fuel transfer.—Ed.

Gentlemen:

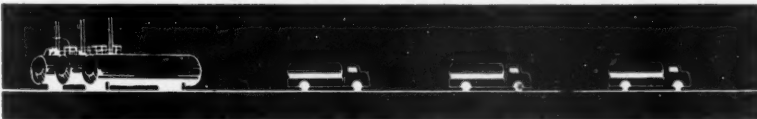
Could you give me some information on butane tanks? One of our competitors has priced a copper lined tank to one of our prospects. Is there such a thing as copper lined tanks? If so, could you tell us where we might find some.

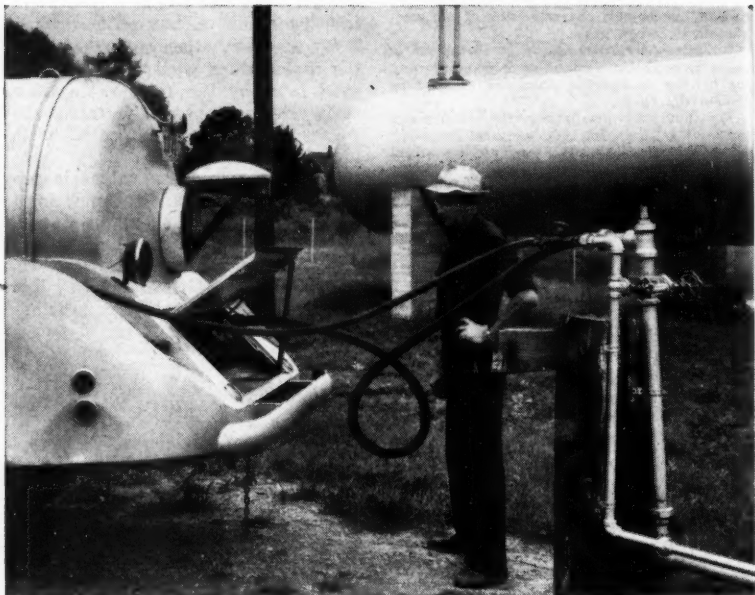
H. E.

Mississippi

We have not heard of the use of copper lined tanks for butane and see no reason why they might be needed.

Copper lined water heater tanks are used as well as monel, glass lined, and copper tanks, but this is to prevent corrosion due to the water.—Ed.





Unexcelled Transfer Service!

For every move you make in handling LP-Gas . . . you'll find Hewitt Propane-Butane gives you maximum safety, speed and efficiency.

The reason is simple. This hose is built by Hewitt especially for your high-pressure transfer service. *It withstands several times the pressure required with LP-Gas.* And it's designed to give you long service life under widely varying temperature conditions.

Not only that . . . Hewitt Propane-Butane Hose has a carefully com-

pounded, non-porous, oil-resisting rubber tube. This special tube effectively defies penetration by your highly volatile liquid petroleum gases.

So for unexcelled transfer service—from storage tank to trucks . . . from bulk storage to tank cars or cylinders . . . or from trucks to home storage tanks—be sure you get Hewitt Propane-Butane Hose.

For complete details, write today. Address Hewitt Rubber Division, 240 Kensington Avenue, Buffalo 5, N. Y.



HEWITT Propane-Butane Hose

HEWITT RUBBER DIVISION **HEWITT-ROBINS INCORPORATED**

COMMENT

THE fuel situation looks better in Texas for this winter (and elsewhere, too). Governor Beauford Jester's emergency fuel commission says so.

Average daily domestic and commercial demand for LP-Gas in Texas is about a million gallons. Average daily production is a million and a half gallons but winter demand exceeds daily production. Storage is the answer—consumer, dealer, producer.

A 6% increase in consumer storage and a 12% increase in dealer storage over last year has been made. But 10% increase in consumers has partially offset this.

The situation is improving rapidly regarding storage and it is hoped there will never be another Texas shortage. No doubt this applies to all areas in large part.

Two accidents in October which received national publicity and which were charged to LP-Gas, have been found to not concern butane or propane, at least in the form handled by LP-Gas dealers.

According to a recent bulletin by John Knox Smith, field engineer, LPGA, the Texas City accident resulted from a pipeline break which was carrying liquid, including LP-Gas, from a production plant to a chemical plant.

The accident in Detroit occurred in the plant of a large LP-Gas user but this fuel was not involved.

Our industry always gets the blame because uninformed newspaper reporters get fouled up on their infor-

mation. Besides, it's not new any more to talk about gasoline fires but because butane and propane are not so well understood, they are still making the front page.

Industrial big-shots say "A serious business recession is unlikely." One gives these four reasons for such belief:

1. Full employment at high wages, giving the American people great purchasing power.
2. Heavy expenditures by the government to finance the defense and European programs and other government activities.
3. Large expenditures by manufacturers and other business groups to expand and modernize buildings and equipment.
4. Shortages in some durable lines, accentuated by government purchases.

Now comes an accounting school for dealers—a short course where industry men can learn the fundamentals and many details of business procedure essential to good book-keeping and accurate records.

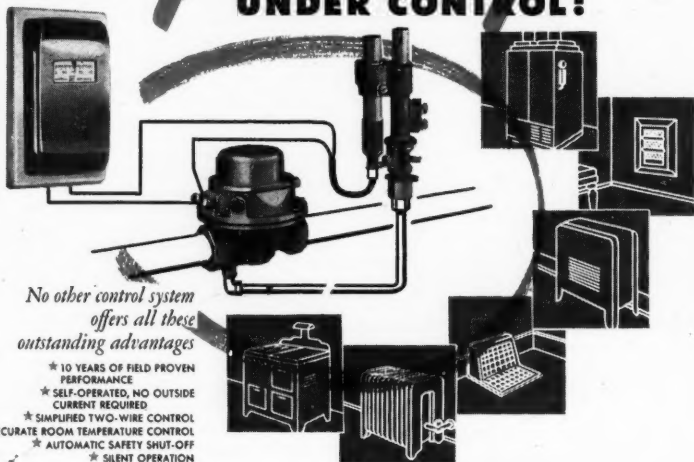
That progressive Kansas Liquefied Petroleum Gas Assn. is the sponsor. This organization, of which Rudy Mahnke is executive vice president, never overlooks an opportunity to serve its members. It instituted a dealer service school plan which has been widely followed, and has conducted a larger-consumer-storage campaign that has brought amazing success.

The Ross-Martin Co., Tulsa, which has developed numerous business forms for LP-Gas dealers, conducted the recent accounting school.

By Ed.

Completely

UNDER CONTROL!



*No other control system
offers all these
outstanding advantages*

- * 10 YEARS OF FIELD PROVEN PERFORMANCE
- * SELF-OPERATED, NO OUTSIDE CURRENT REQUIRED
- * SIMPLIFIED TWO-WIRE CONTROL
- * ACCURATE ROOM TEMPERATURE CONTROL
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THE NEW 500 M. V. B-60 COMPLETELY SELF-CONTAINED AND SELF-OPERATING CONTROL SYSTEM ORIGINATED BY GENERAL CONTROLS

For natural, manufactured or L.P. gases. For all kinds of domestic, commercial and industrial applications. System consists of the B-60 pilot operated diaphragm type gas valve, the T-70 Series Snap-action Thermostat, which is scientifically correct in design, and the new improved ingenious PG-9 Pilot Generator which produces 450 to 500 millivolts of operating current, safety control, and main burner ignition. The B-60 Series of controls have set new standards throughout the gas industry. For complete specifications on the GENERAL CONTROLS broad line of Automatic Pressure, Temperature and Flow Controls, request new Catalog and Service and Instruction Manuals



Automatic, Safe, Silent and Self-Operated

GENERAL CONTROLS

Manufacturers of Automatic Pressure, Temperature & Flow Controls

FACTORY BRANCHES: Birmingham (3), Boston (16), Chicago (5), Cleveland (15), Dallas (2), Denver (10), Detroit (8), Glendale (1), Houston (2), Kansas City (2), New York (17), Philadelphia (40), Pittsburgh (22), San Francisco (7), Seattle (1) • **DISTRIBUTORS IN PRINCIPAL CITIES**

BEYOND THE MAINS

A SMART idea for promotion in the winter, which is the off-season in much of the Northeast, is being tried by Suburban Propane Gas Corp., one of the large marketers which handles Suburban Philgas.

Last winter bottled gas won favor in New Jersey, Connecticut and New York, because it did fine service when a lot of homes were completely without heat due to failure of electricity. This winter the wise householder has been told to prepare for bad weather by putting in propane.

A year ago the troubles of the electric boys began with the record blizzard the day after Christmas. Next came an "ice storm." Rain and sleet fell and froze on trees, and this in turn broke down branches and electric wires, some of which were previously downed by the blizzard, itself.

In addition to the inconvenience of being without light and cooking facilities in the much-touted "all-electric home," there was also actual suffering from the cold. Not that our ambitious electric brethren would be able to sell many northerners on heating entire homes with electricity. But many of the heating systems with other fuels required electricity to operate. So the heat broke down and people shivered.

Heroes in the above picture were families who had bottled gas kitchen ranges. Neighbors from all-electric homes crowded into the propane homes for the evening, to gather around the range in the kitchen. Many a near-case of pneumonia thus was nipped in the bud. Many a poker game and many a sewing circle were literally propane-fueled.

So this year it's a good sales point. Bottled gas can carry on through ice, snow and hurricanes; and householders in cold climates would do well to put in a bottled gas installation now, since there's still plenty of winter left. But why didn't someone think more of publicizing the advantages of propane while the blizzard and ice storm were going on last winter? That would have been really smart public relations.

All state legislatures will be in session this year, 1949. State associations and others need to be on their toes to block unfair legislation, and see that Pamphlet 58 is adopted and followed. It's a year to push ahead on safety.

Wonder how L. C. Parker, attorney and executive secretary of the Louisiana Butane Dealers Association, is coming out fishing with

floats made of the porcupine quills he bought at the National Butane-Propane Association meeting in Chicago? "L.C." could write a book on this particular kind of fishing. And wonder if Al Hadlick ever sent "L.C." the Minnesota porcupine he promised to catch for him, on which Lee Brand agreed to pay postage!

A friend who has hung around the steel business quite a few years predicts the basing point decision, unless Congress knocks it down, may lead Big Steel to put up a plant on property they are said to own in Staten Island, the large but least-known of New York City's five boroughs. This would be to compete with Bethlehem, which has a plant nearer New York than Big Steel now has, and therefore involving lower freight rates. If this happens it should do something to the prices of steel products, including those used by the liquefied petroleum gas industry, in the neighborhood of the metropolis.

Which brings up again the general question of steel for the butane-propane industry. It's like some recent prize fights, alternating quickly between "He's up" and "He's down."

At the moment our industry is out of the running for getting any of the 10% of production coming under the voluntary allocation plan. Naturally the industry continues to get some through normal channels. What we mean, however, is that the industry has not obtained the preferred position to which its essentiality should entitle it.

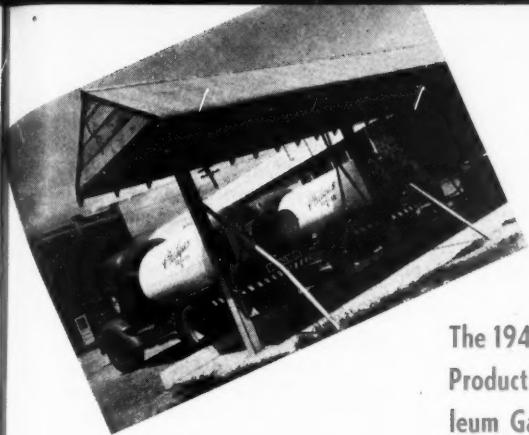
The present allocation program is due to expire Feb. 28. But government officials in the Office of Industry Cooperation and representatives of the steel industry are going ahead, assuming the new Congress will continue the program. Our Washington friends tell us the Liquefied Petroleum Gas Association has done a good job presenting the facts.

Just recently the price of "Essotane" has been raised in Virginia and in North and South Carolina, and it's predicted other marketers will follow suit.

Costs of distribution have gone up, and it's asserted some gas is priced too low. People who sell other products, like gasoline and oil, may not be figuring their costs right, and perhaps need to revise their thinking.

"Table Talk," publication for distribution to consumers by butane-propane marketers, is going over well, and making a hit. It goes to key people like educators in communities, and they can be mighty influential for the industry.

Ed Titus



LEFT: Tank trucks being loaded for delivery of LP-Gas to domestic users. **BELOW:** Domestic LP-Gas installation.

The 1948 Estimate of Marketed
Production of Liquefied Petro-
leum Gas in the United States

INDUSTRY SOARS TO NEW HEIGHTS WITH SALES OF 2,600,000,000 GALS.

DURING 1948 the liquefied petroleum gas industry continued the steady growth which it has consistently shown during the past decade. In spite of various obstacles placed in its path, the rate of growth has been reasonably uniform. It is estimated that during 1948 the total volume of liquefied petroleum gas marketed will reach a total of 2,600,000,000 gallons! This represents a 29.5% increase over the volume sold in 1947.

The increase in 1948 in marketed LP-Gas over that marketed in 1947 was greater than the total quantity



By K. W. RUGH
and E. O. MATTOCKS

Phillips Petroleum Co., Bartlesville, Okla.

JANUARY—1949



K. W. RUGH

Manager, Philgas Division, Sales Dept. Phillips Petroleum Company.

of liquefied petroleum gas marketed during 1942. The 1948 volume is equal to 24% of the total LP-Gas marketed since 1930.

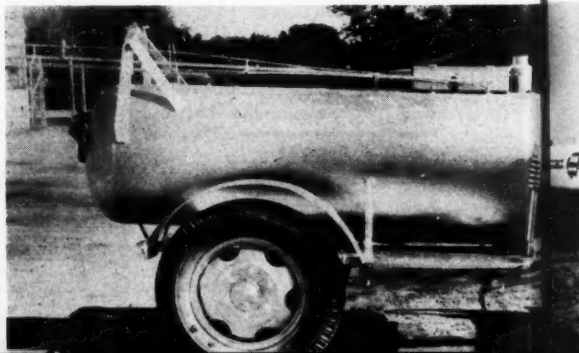
The estimated volume of LP-Gas sold for domestic purposes in 1948 is 1,540,000,000 gallons. This represents an increase of 33.9% over that consumed for the same purpose in 1947. The total quantity consumed for domestic purposes in 1948 is greater than the total quantity of LP-Gas sold for all purposes in 1946, just two years prior. The large demand for this product for homes, farms, institutions and commercial establishments located beyond the gas mains is clearly indicated.

This domestic requirement is made up of two different demands. The first results from new consumers added during the year who previously have used other types of fuel or whose fuel requirements represent an entirely new demand, such as for a new home. The other demand results from the increased usage by consumers who have had LP-Gas installed for some time.

It is estimated that better than 25% of the gas ranges produced in 1948 went into the LP-Gas market. The demand for LP-Gas automatic water heaters and refrigerators continues to increase. Space heating with LP-Gas is enjoying a greater demand than ever. All of these demands are the result of the satisfaction which consumers are enjoying from the use of LP-Gas.

It is estimated that there are now about five and one-half million homes using LP-Gas. It is also estimated that one-third of these use LP-Gas for space heating as well as for the other household purposes. There are presently installed more than 3000 bulk plants, a number which is about equal to the number of counties in the United States.

Specially designed trailer used for supplying LP-Gas to agricultural equipment.



The amount of LP-Gas marketed for industrial and miscellaneous uses during 1948 is estimated at 280,000,000 gallons. One of the most rapidly growing uses for LP-Gas by industrial plants is for standby to other fuels, generally manufactured or natural gas. Greatly increased domestic and commercial space heating requirements have resulted in demands that frequently exceed the capacity of natural gas transmission lines or that of manufactured gas producing plants.

To meet this increased demand it has been necessary to force more and more industrial gas consumers to accept a lesser amount of gas during the peak load periods. To insure against an interruption of gas supply, a large number of industries have installed LP-Gas as a standby fuel. These installations furnish varying percentages of the total gas load, in many instances supplying complete replacement with mixtures of LP-Gas and air. This replacement with LP-Gas assures continuity of production with a minimum of concern over burner and furnace operation.

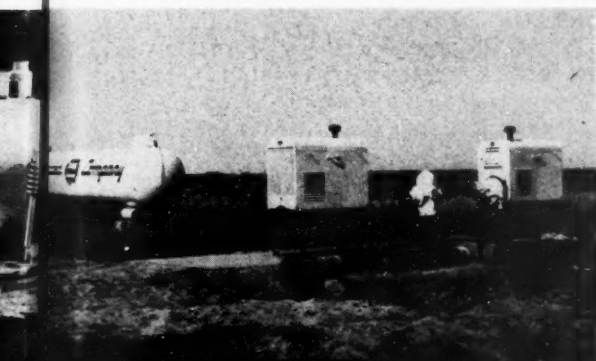
E. O. MATTOCKS

Technical Representative,
Chemical Engineering Dept.,
Phillips Petroleum Company.



The use of LP-Gas in gas manufacturing installations continues its rapid increase. It is estimated that 280,000,000 gallons were used in 1948 for this purpose. This is an increase of 65.4% over 1947. The increased distribution of natural gas throughout the country has in many instances resulted in excessive space heating demands during the winter months. LP-Gas is used to a great extent to augment both natural and manufactured gas supplies during peak loads.

A controlled amount of LP-Gas and air may be mixed directly with manufactured gas without encountering burner operating difficulties, but the reforming of LP-Gas to



LP-Gas fueled irrigation pump at work on the Texas plains.

MANUFACTURED PRODUCTION OF LP-GAS

[illegible]

(1) Household use plus other requirements by these customers such as irrigation pumping, tractor fuel, flame welding, chicken brooding

and similar uses. Included also is LP-Gas sold by domestic engine fuel and for gas manufacturing purposes.

(1) Includes LP-Gas sold for fueling internal combustion engines.
(2) Not comparable due to segregation of chemical manufacturing industries. In this table, total sales for all years except 1944 are for the years 1931 to 1947, inclusive, and obtained from the same source. All other volumes were estimated by the writers. The total sales volume included all LP-Gases, including butane and propane-butane mixtures when sold as such. Until 1944 the sale of pentanes when sold for use as motor fuel blending was included. Since then it has been excluded. It does not include sales volume for use as motor fuel blending with heavier petroleum fractions for motor fuel purposes. Intercompany sales transactions such as sales of LP-Gases by one company from other companies and resold as LP-Gases have been eliminated in order to avoid double counting of sales of LP-Gases by one company from other companies and resold as LP-Gases sold directly by the producer at the point of production for fuel polymerization, solvent de-aerating, etc. Method to the figures include sales of hydrocarbon to plants manufacturing synthetic rubber or aviation gasoline or other components.

produce a substitute gas is permitting even greater quantities to be used. LP-Gas is used generally not only to feed the reforming units but also to enrich the produced gas to the desired heating value. Large proportions of LP-Gas and air mixtures may be mixed with natural gas or in some instances may replace natural gas completely without causing any unusual burner operating difficulties.

The installation by utilities of large new standby units or additions to present installations has continued throughout 1948. Almost 400 towns are now served with LP-Gas exclusively.

The volume of LP-Gas used for chemical manufacture is one of the most difficult to estimate. LP-Gas is used as an intermediate product which is processed to some other product, the latter serving as an ingredient of a required chemical.

Battery of 30,000-gal. capacity propane storage tanks for utility standby.

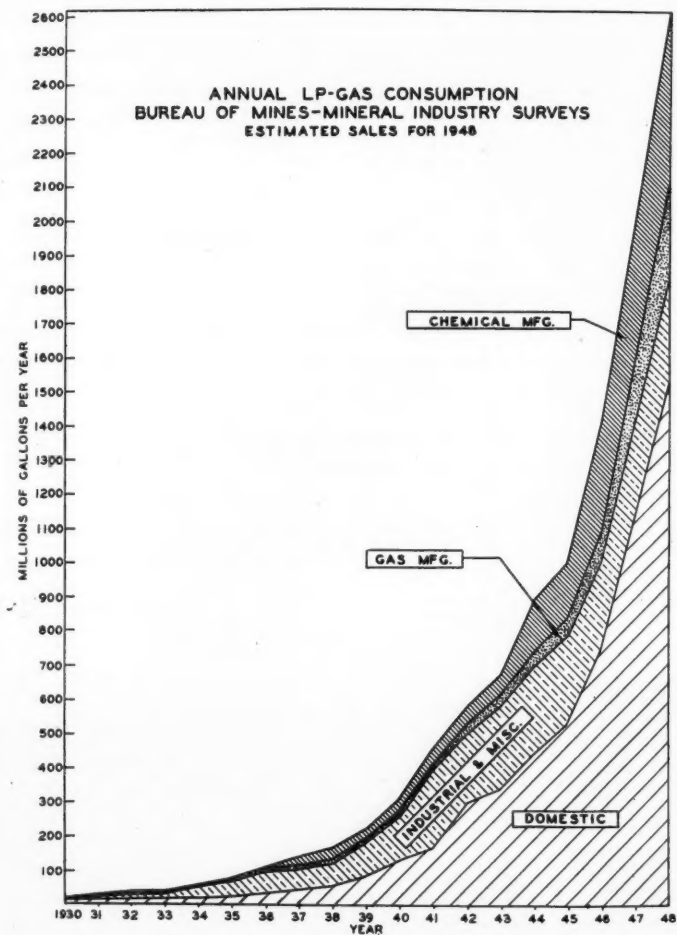


1948 GROWTH

Total sales—2,600,000,000 gals. Up 29.5%.
 Domestic sales—1,540,000,000 gals. Up 33.9%.
 Domestic accounts—5,500,000.
 Space heating accounts—1,800,000.
 Industrial sales—280,000,000 gals.
 Gas manufacturing—280,000,000 gals. Up 65.4%.
 Chemical manufacturing—500,000,000 gals. Up 20.7%.
 Bulk plants—3000.
 Town plants—400.

Large quantities of LP-Gases in the gaseous form are furnished to chemical companies through pipelines directly from the source of production. In a number of cases, these gases are composed largely of olefins—unsaturated hydrocarbons. It is estimated that 500,000,000 gallons were used in 1948 for chemical manufacturing purposes. This represents an increase of 20.7% over 1947.

During 1948 great results have been accomplished in increasing the storage capacity at consumers' installations. The industry has found

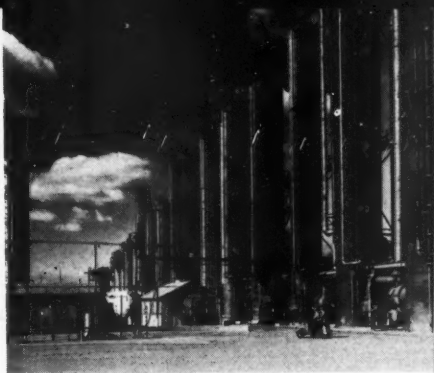


this to be essential in order to provide gas for house heating during peak demands when requirements exceed production. Transportation facilities, both tank car and transports, have been increased in adequate number to handle the increased amount of LP-Gas marketed.

The pipeline movement of LP-Gas to the domestic, industrial and utility markets is increasing and during the year a major marketer completed a finished petroleum products pipeline through which propane and butane are transported.

New sources of production of liquefied petroleum gas together with the enlargement of existing producing facilities have increased the supply of LP-Gas during the past year to keep pace with the increase in demand.

The acceptance, by most of the states in the United States, of the National Fire Protection Association Liquefied Petroleum Gas Code which is generally referred to as the National Board of Fire Underwriters' Pamphlet No. 58, entitled "Standards for the Design, Installation and Construction of Containers and Pertinent Equipment for the Storage and Handling of Liquefied Petroleum Gases as Recommended by the National Fire Protection Association," indicates the general acceptance of this code as the basis for standards of safety. The code has been used in whole or in part as the basis of many state and local laws, rules and regulations. Various provinces in Canada are considering it for adoption as



Fractionating facilities for LP-Gas production.

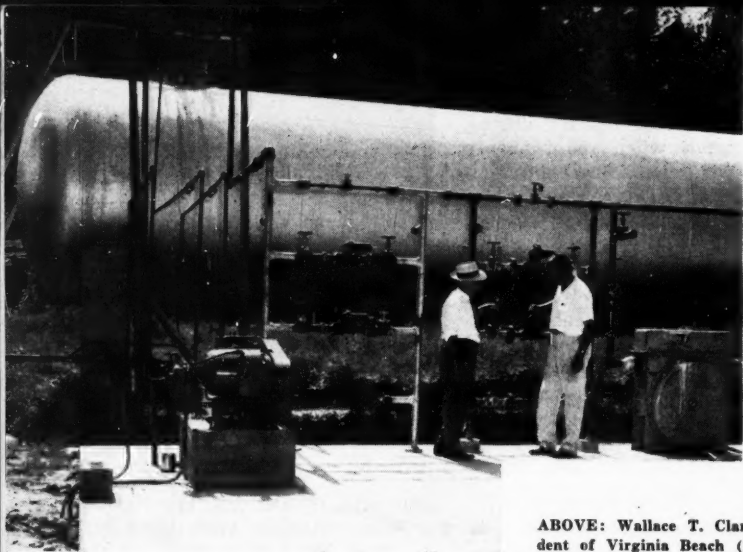
provincial regulations. The National Fire Protection Association during 1948 developed a code for the use of LP-Gas by utilities.

While the unabated increased demands for LP-Gas require major readjustments in all phases of the industry, every indication points to the ability of this industry to meet the challenge of these demands.

Engineers Discuss Removal Of Nitrogen From Natural Gas

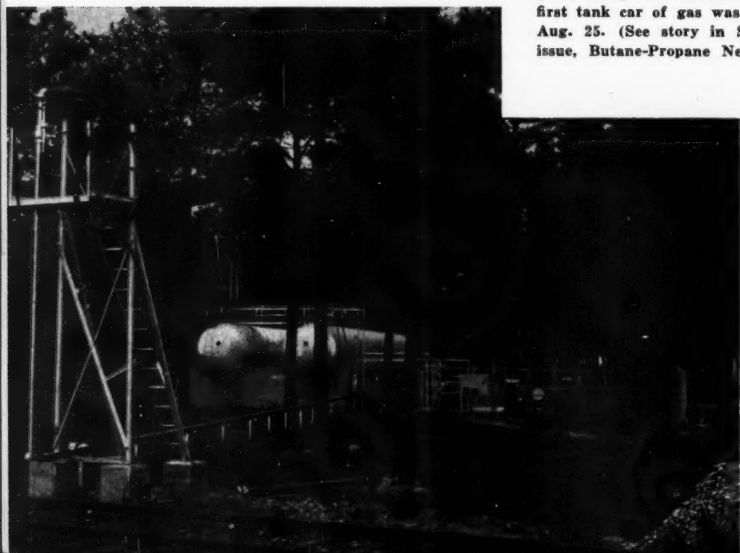
One hundred gas engineers and executives met under Bureau of Mines sponsorship in Amarillo, Tex., last month, to discuss practical and economical methods of removing nitrogen from natural gas to improve heating qualities and permit the recovery of hydrocarbons.

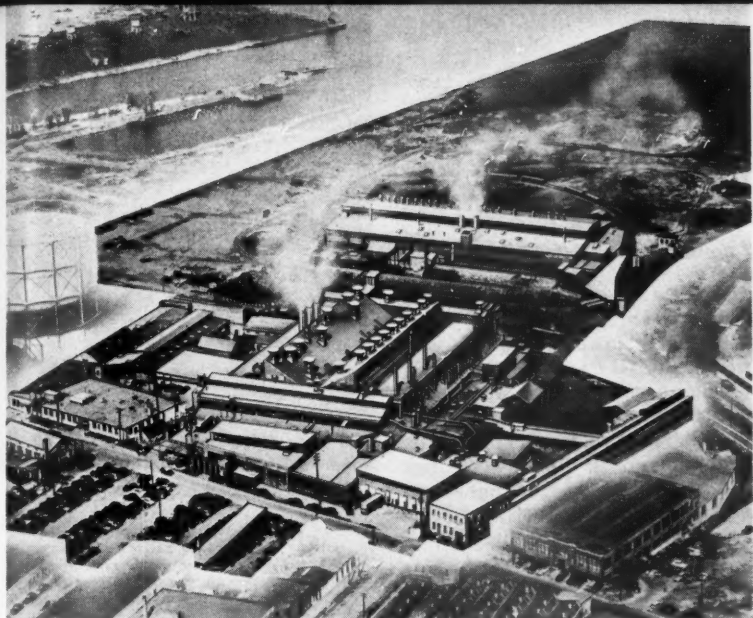
The Bureau of Mines, together with the American Gas Assn., called the meeting through P. V. Mullins, helium engineer, supervisor of the nitrogen-removal research of the bureau. Extraction of the heavier hydrocarbons such as butane and propane was said to be a major goal.



Virginia Town Plant Begins Service

ABOVE: Wallace T. Clark, president of Virginia Beach (Va.) Gas Corp., and (right) Rex T. Lambert make final check of unloading and metering equipment before turning propane vapor into 10 miles of copper mains which will serve Virginia Beach residents. **BELOW:** Unloading platform and bulk plant of the company, ideally situated in a shady grove along the railroad spur. The first tank car of gas was unloaded Aug. 25. (See story in September issue, Butane-Propane News.)





Michigan Foundry Has No "Down Time" After LP-Gas Replaces Natural

TWELVE of the largest gas consumers in western Michigan were cut off from natural gas on Feb. 1, 1948, by an order of the State Corporation Commission. There existed a dire shortage of natural gas in Michigan and this curtailment was deemed necessary to insure adequate supply to the domestic consumers, most of whom used gas for water heating and cooking. All industries that re-

quired over 20,000,000 cubic feet per year were cut off.

Lakey Foundry and Machine Co., a large manufacturer of gray iron castings, was one of the companies affected by this order. This company consists of two large foundries,

By C. S. FLYNN

Gas Plant Supervisor, Lakey Foundry &
Machine Co., Muskegon, Michigan

one of which manufactures large castings for the automotive and farm machinery industries, and the other manufactures smaller castings, such as motor heads, manifolds and home appliance castings.

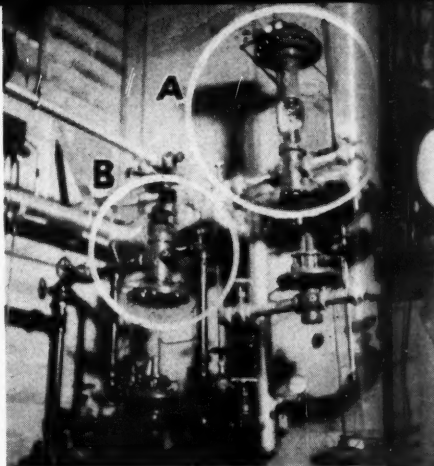
Entire Plant Heated With Gas

Of all the departments in this large company, virtually every one is dependent upon gas in one way or another. Gas is used for space heating throughout both foundries, machine shop, pattern shop and offices. Gas is used for baking cores, assembling cores, dip-drying cores, drying molds, and for annealing and straightening castings. The gas demand runs more than 1,000,000 cubic feet a production day, and is essential to operation.

Before the curtailment of gas, Lakey Foundry installed a propane gas-air mix plant to substitute for natural gas; however, the plant was far from adequate in meeting the requirements of this company. Problems were encountered from the first day, and continued until the revisions mentioned below were made. For the sake of brevity, only the company's requirements and the installations that were made to meet these requirements and make for a perfect operating plant, will be explained.

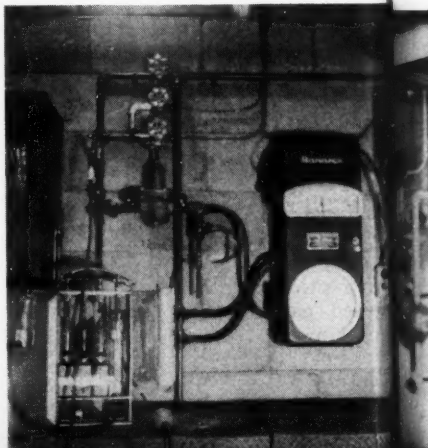
Of primary importance to Lakey Foundry was a plant capable of operating 24 hours a day, 7 days a week. Without gas there was no production, and the cost on loss of sales due to down time, ran into hundreds of dollars a minute on a production day.

Regardless of how good is a piece



Pressure regulation equipment "A"—on the unmixed gas which controlled "B"—a balanced diaphragm type regulator on the air. These maintained equal pressures on both air and gas.

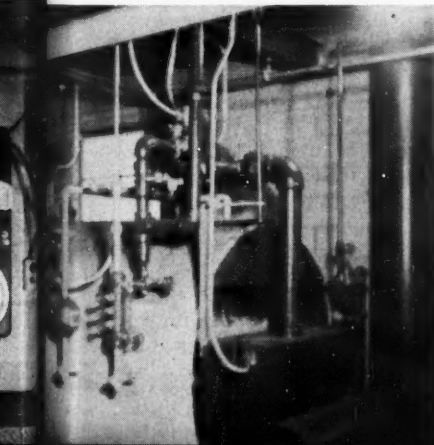
This is a gravity meter and recorder hooked up to determine the specific gravity of either the unmixed or mixed gas. At left is orset used to check against gravity meter.





C. S. Flynn adjusting the orifice for changing the ratio of air to gas on one of the ratio valves. The two flow control instruments are shown at left.

One of the steam boilers. The boilers are equipped with a "pressuretrol" which sets off an alarm if the steam drops below 8 psi. This warns the operator in time to correct the trouble.



of equipment, sooner or later, parts will wear out, need adjustment, break or need cleaning. Consequently, the only reasonably sure way of having a plant capable of continuous operation was through the installation of stand-by equipment. All equipment that was in constant operation, was made in a dual setup; two steam boilers, two vaporizers, two sets of pressure regulating equipment, and by-passes around the gas-air ratio equipment. By-passes sufficed on the gas-air ratio equipment because the ratio could be maintained manually for a while if necessary. Only one air compressor was installed because stand-by air was piped in from the foundry powerhouse.

It was necessary to have a plant that was capable of mixing 100,000 cubic feet of gas per hour at 12 psi pressure maximum demand, and one that was capable of handling a fluctuation in demand, either rise or drop of 90,000 cubic feet per hour without having a variation of over 100 Btu's per cubic foot of gas mixture. The Btu content of the gas had to be consistent because of the many different types of industrial equipment being used.

Effect On Ovens Differed

One type of core baking ovens would burn up the fans and bearings if the gas enriched much over 100 Btu's per cubic foot above normal. Other baking ovens of the old lava tip burner variety, without safety controls, would blow the flame out and proceed to fill the oven with gas if the Btu content



This is C. S. Flynn, author of this article about the Lakey Foundry, which is pictured on the opening page. The Lakey Foundry & Machine Co., of Muskegon, Mich., has changed over its many industrial processes from natural gas to LP-Gas-air.

of the gas dropped much more than 100 Btu per cubic foot below normal. This would also increase the length of time necessary to bake cores and for various other heat treating procedures.

Since 12 pounds pressure was required on the mains, it was decided to mix the gas and air at that pressure, rather than dropping to atmospheric pressure, mixing the gas, then building the pressure back up. Less equipment would be required, and consequently, operation costs would be less. On handling the peak demand, it was a matter of installing air compressors, boilers, vaporizers, and regulators large enough to handle the peak demand.

The pressure regulation was

taken care of by a Fisher "Wizard" Type 555T regulator on the unmixed gas, which, in turn, controlled a balanced diaphragm type regulator on the air. These maintained equal pressures on both air and gas. The mixing equipment consisted of three North American ratio valves, one on the gas, two on the air, and two Brown "Air-O-Line" flow controller instruments. One instrument controlled the ratio valve on the gas and one of the ratio valves on the air. It would open and close the valves as the demand increased or decreased, maintaining the set ratio of air to gas. The other controller tended to close off the other ratio valve on sudden demand, then gradually open. This prevented getting sudden surges of air in the line.

Another decision that had to be made was in the type of fuel to be used—butane, propane or mixtures of butane and propane. Mixtures of propane and butane were decided against because of the inconsistency of mixtures. The percentages were bound to vary, resulting in an unstable air-mix.

Butane Merits Were Weighed

The main consideration for butane was from an economic standpoint. The greater Btu content of butane was a point worthy of consideration, especially since the peak months demand ran 313,000 gallons. The only point against butane was its higher condensation point. It would be all right in the summer months, but in the winter, and Michigan is noted for its long winters, it would have to be

pumped into the vaporizers and, on minimum demands, condensate would form in the lines.

It was finally decided upon to use butane on the peak loads, or production days, and reserve 3 of the 12 30,000-gallon storage tanks for propane. Propane would then be used to pressurize the butane tanks and also to carry the load on minimum demands, or non-productive days.

It was necessary to know at all times the exact Btu content of the gas mixture so that any sudden changes could be taken care of immediately. There are a number of things that could cause these sudden changes. As previously mentioned, no mechanical equipment is completely foolproof. A boiler failing to come on would cause the gas to become richer as the temperature and steam pressure dropped. A sudden excessive demand for

liquid gas could close off the excess flow valves on the tanks. This could be caused by the sudden release of a sticking liquid level control. In this case, the gas would gradually become leaner. A faulty regulator could cause a difference in pressure of the air or gas, causing the gas mixture to become richer or leaner.

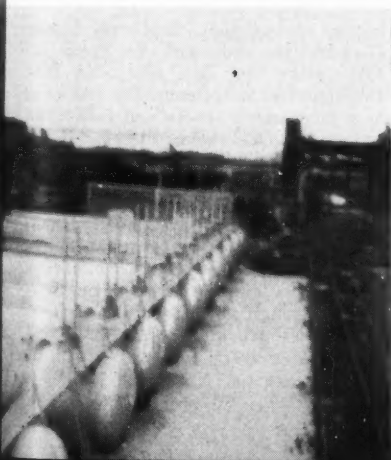
Where Trouble Would Show Up

A countless number of things could happen. A water line or vaporizer freeze, a sudden surge of propane from the butane tanks, air failure, a ratio valve sticking or with a ruptured diaphragm, a sudden excessive demand for gas could throw the flow controller completely out, but regardless of what happened, the first sign of trouble would be in the richening or leaning up of the gas-air mix.

A Ranarex specific gravity indicator and recorder was the answer to the method of determining the Btu content of the gas mixture. From Knoy's interchangeability of gases formula, it was known that to substitute for a 1050 Btu .60 specific gravity gas would require a 1560 Btu 1.32 specific gravity for propane-air mix, or 1640 Btu 1.48 specific gravity for butane-air mix. The specific gravity indicator was equipped with contacts that could be set at any points on the indicator, which would set off an alarm if the pointer went above or dropped below the settings of the contacts.

For instance, a butane air-mix calls for 1640 Btu 1.48 specific gravity gas. The allowable tolerance is 100 Btu each way, which would

Some of the storage tanks at Lakey Foundry bulk plant.





Overall view of storage plant and rail facilities.

be 1540 Btu on the low and 1740 on the high end. In terms of specific gravity, it would be 1.45 to 1.51. These then would be the maximum points that the contacts would be set. The indicator would set off an alarm if it dropped below or went above these points.

This would afford the operator about 5 to 10 minutes to rectify the trouble before the foundries went down. It takes approximately 5 minutes before the lines are completely drained. The gravity indicator also was hooked up in such a manner as to allow a gravity reading to be taken from the vaporizer of the unmixed gas. This served as a check on what was coming through, butane or propane. For a check on the gravity meter, a Hays Orset was used.

In conclusion, it may be added that of all the diversified gas burn-

ing equipment being used, none had to be completely abandoned on the changeover. Most of the trouble that did occur, came from pilots, a few of which had to be changed. On three of the boilers, the orifices and manifolds had to be changed. Other corrections consisted of slight air adjustments and gas pressure regulations. The gas plant itself has fulfilled all the requirements of the company without any down time since the present plant was installed.

Southern States Cooperative Sold to Suburban Propane

Purchase of the liquefied petroleum gas interests of Southern States Cooperative, Inc., in Maryland, Delaware and Pennsylvania, is announced by Mark Anton, president of Suburban Propane Gas Corp., of Whippany, N. J.

Southern States Cooperative, Inc., one of the largest cooperatives in that area, has operated the business for several years through a wholly-owned subsidiary, Cooperative Seed and Farm Supply Service, Inc.

Mr. Anton, in announcing the purchase, states that Southern States Cooperative undertook the negotiations after they had concluded that the liquefied petroleum gas business is a much more specialized field than anticipated and was, therefore, not what is normally considered a cooperative type undertaking. The new property, he said, would be integrated with Suburban Propane's operation in that area.

Suburban Propane Gas Corp. serves nine states along the Atlantic Seaboard through 28 bulk stations. General offices are maintained in Whippany.

Carrying the Wonders of LP-Gas to the Door Sells English Housewife

AN account of the rapid growth of the bottled gas business in the western part of England has been supplied to **BUTANE - PROPANE News** by Archibald Turner, an operator who has been visiting this country to study the business here.

Mr. Turner calls his gas "Bottogas." When he first went to the west of England in 1936, there was, as far as he could discover, only one consumer of bottled gas in that territory. Now, he said, there are 3000 to 4000 consumers in one county, Gloucestershire.

The most popular bottle of butane he sells contains 32 pounds and sells for 22 shillings, or \$4.50, which means about 14 cents a pound.

Mr. Turner's organization sells by means of a demonstration van. Men go from town to town, and farm to farm, showing prospective customers exactly what the appliances are and how they work. Loaded on the van are a range, irons, a hot plate, and washing machine, which has a boiler fueled by butane and is agitated by hand.

The van also carries considerable lighting equipment, since much lighting with butane is sold in England. It is popular out beyond both the electric wires and town gas mains, and often replaces kerosene.

One method of promotion used successfully by Mr. Turner is to go into a town where liquefied petroleum gas has not been used before, and which is not served by electricity or gas from the mains, and offer to install a light with butane as a fuel in the town's leading pub, or in a store. He installs the light for nothing, and supplies one cylinder of fuel.



ARCHIBALD
TURNER

Lights Are Fine Publicity

While the pub-keeper may view the experiment with skepticism to begin with, he invariably becomes a satisfied customer. The light and the people who come to see it increase the pub's business. And it serves as an initial advertisement, for Mr. Turner, leading to sales to other customers.

In some such establishments, he has been able to do quite a job of interior decoration, with indirect lighting fueled by butane, similar to jobs done with electricity in fancy taverns in this country.

Use of butane in England has developed to the point where the safety factor has become an important one, Mr. Turner stated. He



Dealer display at county fair in Gloucester, England. Note miniature, white water heater in center front of picture.

deplores the use of shoddy appliances in some instances, and said that leaky taps can be a menace and poor installations a disgrace to the industry. Mr. Turner points out that his own organization's motto is, "Safety First to Last," and that they have not yet had an accident.

The industry as a whole in England is now engaged in formation of a set of standards, and it is hoped to establish an effective governing body, to issue an approved seal to all appliances worthy of it.

Mr. Turner's organization transports its own gas bottles in a five-ton truck (lorry) which makes the trip of 100 miles each way to the National Oil Refinery at Skewen, South Wales. The truck carries about 400 cylinders.

This enables him to give an ef-

ficient service and cover each village in his territory about once a week.

His company sells gas for cooking, lighting, water heating, space heating, and refrigeration. For the last, they sell the original Swedish Electrolux, which has a plant in England.

They have industrial work, for instance Bunsen burners for plastic works. They service some bakeries and hotels, as well as roadside snack bars, and trailers, which are known in England as "caravans."

In one community an experiment is in progress to see what use can be made of sewer gases commercially. Butane is now used for Bunsen burners which figure in these experiments.

Experiments are being made to

use butane as a weed killer. It is used now in pottery kilns.

Still another use is for heating churches. As Mr. Turner puts it, the village johnnies used to fire up the church furnaces on Saturday night. Now they are disinclined to do it, so that the task would be left to the old parson. But a nest of blow torches fueled with butane, placed in the furnace, sometimes serves to heat a church's piped hot water system.

Heat Homes With Butane

The butane heating jobs they sell include some central heating of bungalows with hot water systems; also, a portable heater which can be moved from room to room. Cost of butane usually runs about the same as the local town gas rate, Mr. Turner stated. At points where they compete with electricity, he estimated the cost of cooking with butane comes to about a third that with electricity.

In making installations, they use copper tubing only, and only the "proper kind of fittings," more costly, but cheaper in the long run.

The organization consists of seven delivery, servicing and installing men on the road, one salesman outside and a manager and sales girl in the shop. They have a few sub-dealers in outlying districts. Motor equipment consists of the 5-ton truck, one 2-ton truck, a 1½-ton truck, a small Ford van, and the demonstration truck.

Mr. Turner believes there are boundless opportunities for expansion of butane-propane use in regions of the world like the con-

tinents of Europe and Middle East.

In addition to marketing the bottled gas, Mr. Turner's organization sells appliances, including stoves made under their supervision. They have developed a new type of gas range suitable for streamlined kitchens now being fitted into prefabricated homes.

Mr. Turner brought one of the latest models of this range with him to this country, and sent it for testing to the AGA's laboratories in Cleveland. He hopes to have it ready for the American market within a few months. He says it is "a revolution in gas cookers," and that it is well adapted to small homes, trailers, and yachts.

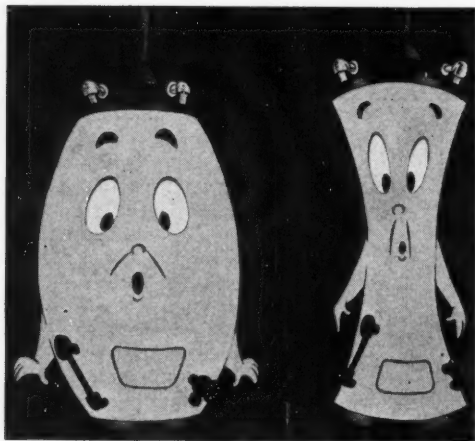
Mr. Turner's organization had an attractive display of their bottled gas, together with appliances sold, at the Three County Show in Gloucester, England. It is there that their head office is located, at 9 Market Parade.

Eugene Lanning Passes On After 22 Years in Industry

Eugene S. Lanning, president of the St. Petersburg Gas Appliance Co., Inc., St. Petersburg, Fla., Green's Fuel distributor for Pinellas county, died Nov. 15.

Mr. Lanning was vice president of the Florida Liquefied Petroleum Gas Assn. and was a prominent civic leader. He and C. R. Anderson founded St. Petersburg Gas Appliance Co. in 1926, which was incorporated in 1928. The company owns a large and spacious showroom located in the St. Petersburg business section and Mr. Lanning served as president since its inception. In 1935 this company became a Green's Fuel distributor.

The Fate of Undersized Water Heaters



ABOVE: Expansion and contraction wear out under-sized water heaters, as pictured here from the 15-minute sound slide film just released by the Pacific Coast Gas Assn.

BELOW: "Obsoletia" is the final resting place for worn-out water heaters, according to this sound slide film. "Little 20-Gallon," here, is a bad example of a unit too small for the needs of modern homemaking and plays the victim in the 15-minute color film.



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Unattended Central Offices of Telephone Company Have Automatically Controlled Propane Heaters

By ED TITUS

THE New Jersey Bell Telephone Co. now has a policy of using city gas when it is available, and propane beyond the city mains, with unit heaters, for protecting delicate machinery, in the type of community central office which operates automatically without any personnel being present.

Where propane is used, installations of from four to eight 100-pound cylinders are provided, the size of the installation depending on the size of the central office, and on the severity of winters in the community served.

Just as the telephone apparatus operates automatically, making dial

phone connections for the whole community—the city gas and propane installations also function automatically, to keep the temperature and humidity at the right level.

At stated intervals someone stops by to inspect the operation. Except for these visits, these automatic stations function without attention.

When the New Jersey company started some 10 years ago to build the central offices which carry on without anyone stationed in them,

A typical, unattended central office of New Jersey Telephone Co. which is heated by propane and automatically controlled.



both electric heaters and oil burning floor type, radiating heaters were installed for purposes of controlled heating.

It was found, however, that electricity was more expensive to use than piped or bottled gas. In the case of oil, experience showed that special ducts were necessary to bring in fresh air, and other special equipment as well. There are, however, seven existing offices with electric heaters and two with the floor type oil heater.

There are, also, two existing offices and one under construction of a larger type, which are heated by hot water with radiators and steam with unit heaters, using oil burning boilers and equipment.

Both gas from the mains and propane have been found to be satisfactory fuels. They can be automatically controlled with pre-

cision that protects the telephone equipment.

The use of propane with unit heaters has been increasing, and it is now the company's policy to set up this type of installation when new offices of this type are put in operation and when existing offices that run without personnel stationed in them are enlarged, if located beyond the city gas mains.

In all these stations, the thermostat is usually kept at 55° and the humidistat at 65% relative humidity.

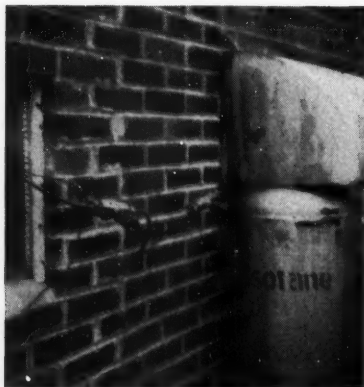
Where Stations Are Located

The four New Jersey communities where unit heaters with propane installations are now functioning are Newfoundland, Succasunna, Allentown and Englishtown. In addition similar installations are under way at Pemberton, Woodbine and Medford, but are not yet completed. The propane used is "Essotane," supplied by different New Jersey dealers.

While this type of installation has been in use and giving full satisfaction for about 10 months, the company about eight years ago established, and is still using, a somewhat different kind of propane setup on Long Beach Island, a long sandy strip off the central part of the New Jersey coast.

From the Jersey Central Power & Light Co's plant at Beach Haven Park, the propane is piped to unattended telephone central offices at Beach Haven and Beach Arlington. Each of these offices has a floor type heater.

There are also 13 unattended



Cylinder setup at Medford, N. J.



Cylinders at Newfoundland Station

central offices where city gas is used. Each of these offices has the floor type heater.

Detailed specifications have been drawn up by the New Jersey Bell Telephone Co. for the heating installations, to assure that materials and workmanship shall be of the highest grade, and the best practice in the trade. Equipment and materials are required to meet the approval of the National Board of Fire Underwriters, and the Schedule Rating Bureau.

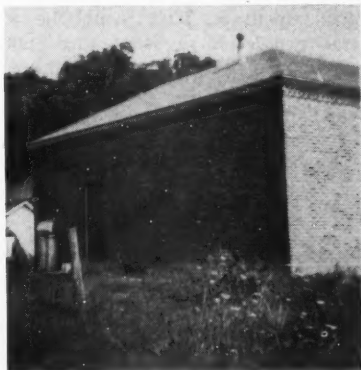
Under the specifications for a typical unattended central office using propane, the heating contractor agrees to install a gas-fired unit heater complete with controls, piping, valves, vent, etc. He is required to support the unit heater on suspension type hangers. The unit is furnished complete with heater element, propeller fan, directly connected electric motor, gas burner with controls, and a sub-

stantially constructed housing with adjustable discharge louvers.

The unit heater is required to be vented with a back-draft hood connected to a transite vent and hood on the roof. Capacity specified is 52,000 Btu output at 60° entering air temperature using gas.

The heating contractor is required to furnish and install the following controls for complete automatic control of the system: A standard room thermostat is used in conjunction with a standard humidistat which operates a relay controlling the heating equipment. The controls are wired up by the electrical contractor.

The specifications provide for a system of gas piping from the unit heater to connect with bottled gas tanks. The pipe used is $\frac{1}{2}$ in., 150-pound copper tubing extending at least 12 in. outside of the building wall with shutoff cock installed on the inside of the wall, where the



At Newfoundland. Note roof vent.

gas pipe comes through to the heater.

The electrical contractor is required to wire the thermostat, humidistat and relay provided by the heating contractor to the gas heater using BX cable for power wiring and ovalflex with No. 14 wire for the thermostat and humidistat.

Equipment also includes a transite flue pipe complete with flashing and protective sleeve and necessary supports. The flue is capped with a rotary ventilator.

This ventilator is a turbine ball bearing ventilator with 6-in. neck diameter to fit over the transite flue.

The transite flue serves to take fumes out. The rotary ventilator eliminates back-drafts, thus preventing the pilot from blowing out. An additional safety feature provides that in case the pilot should go out, an automatic shutoff valve completely stops the flow of gas.

Still another safety feature consists of an air vent in the exterior wall, on which there is always a 2 in. opening. This would be a final protection against any gas leaks, since the gas would be taken out of the building. It is also used for bringing in outside air for

the necessary combustion purposes.

The thermostat is placed 4 ft., 6 in. above the floor, the humidistat 2 ft. above the floor and the relay 2 ft. above the floor. It is found that with city gas and propane as fuels and with the kind of a setup specified, it is possible to keep dirt and dust in the office to a minimum, which is essential for the proper operation of the dial equipment housed within.

While it is known that the temperature can get down to 40° without damaging or impeding operation of the equipment through freezing, the thermostat is adjusted to keep the temperature at 55, in order to allow a good margin and keep the office at a more comfortable temperature for employees entering for inspection or maintenance work.

The unattended central office heated automatically with city gas or propane has proved a practical and efficient setup for the New Jersey Bell Telephone Co. under the rates for gas and electricity in vogue in their territory. Doubtless, similar offices and equipment can use this fuel and these types of heating equipment in other parts of the country.



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Attractive Appliance Displays Have High Advertising Value

The Lakeland Gas & Appliance Co., Lakeland, N. J., offers "Pyrofax" service from this modern appliance store located on the edge of town. One of the oldest Pyrofax distributors, this company is owned by Donald L. Wilson. S. E. Armitage is general manager of the organization.

Operating over a radius of about 50 miles, Lakeland Gas furnishes a complete gas service for domestic and industrial users. Four delivery trucks are maintained for the transportation

of fuel in 100-lb. cylinders to the many customers of the company.

The new, two-story addition was added to the office and showroom about a year ago.

A complete display kitchen is included in the showroom for demonstration purposes. This ultra-modern showroom makes appliance selling a little bit easier. Displays such as shown in picture make the public aware of its local LP-Gas dealer—and build gas loads.

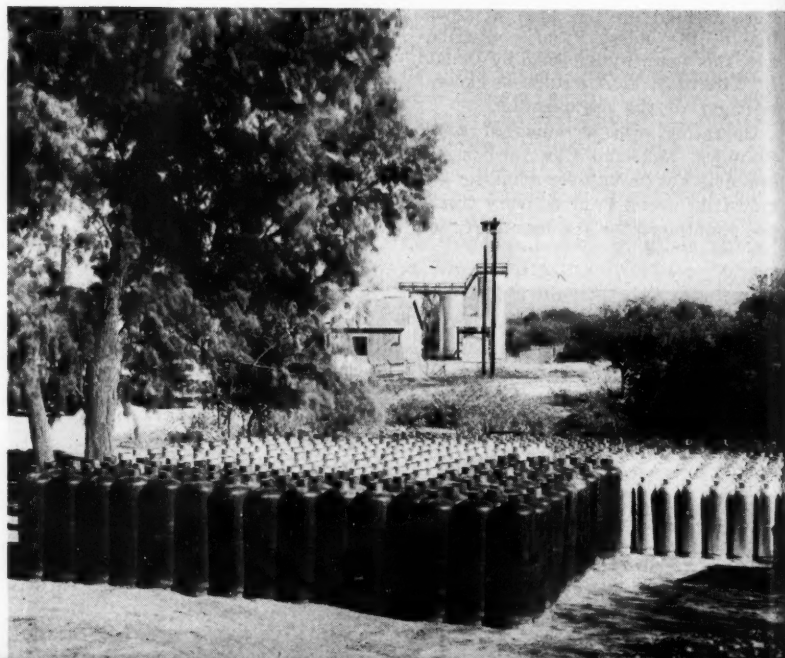
TOP: Outside view of Lakeland Gas & Appliance Co., Lakeland, N. J.

BELOW: The well-filled showroom builds business.





ABOVE: Bulk plant, office and field force, delivery trucks and service cars of the Rockgas Service Co., Inc., Tucson, Ariz. **BELOW:** Part of 1500 reserve cylinders maintained to assure adequate facilities for all replacements and also serving as additional bulk storage.



It's Hard to Balance a Desert Load

EVERY LP-Gas distributor has his problems, but for most of the men serving the gas-hungry public the problem of balancing their loads is the major one they face. Many dealers are approaching a partial solution to this by developing more summer business to offset the demand for space heating fuel in winter months.

But there are some areas where this is not possible. Take Tucson, Ariz., for instance. Tucson has a huge winter population in tourists and "regular" winter residents, but in the summer the population total takes a tremendous drop. The winter residents and the tourists leave; left are only the year-'round Tucson residents, and it gets hot on the Tucson desert in the summer.

Facing the load problem that such a situation brings, Clyde and Harold Ijams have devised the best possible solution. The Ijams operate and manage the Rockgas Service Co., Inc., in Tucson, at 410 N. Fourth Ave.

First of all, the Ijams write into each "Rockgas" contract that they will not supply fuel for space heating. They have attempted to limit their load strictly to cooking, water heating, and refrigeration, and have been quite successful in this endeavor. This keeps their winter-summer balance from being more badly out of balance than it otherwise would be.

Just as important, the Ijams maintain a large supply of reserve cylinders—1500 of them—which see double duty. They're on hand, of course, for any replacement calls, and for any

emergencies. But they don't stand empty; the Ijams fill these cylinders for extra storage to keep their bottled gas reserve up as high as possible and as a substantial addition to their bulk plant capacity.

The accompanying illustrations show a part of the Ijams' reserve cylinder supply and the bulk plant, office and field force, delivery trucks and service cars which are a part of this Tucson Rockgas operation. This on-the-job sales and service force enables the Ijams to sell gas on a regular monthly schedule and provide effective and efficient service.

Yes, the balanced load problem is often a problem which threatens to get out of hand. The Ijams, operating under very rough conditions, have shown how it can be kept under control.

The Ijams' plant is one of many associated with the Imperial Gas Co., Los Angeles, owners of the brand name, "Rockgas."

Dix Appoints Oklahoma Distributor for Carburetor

Dix Manufacturing Co., of Los Angeles, manufacturer of the Dix LP-Gas carburetion unit, has appointed Roger Laubach & Associates as its factory representative for the state of Oklahoma.

The Laubach organization has headquarters at 813 N. Brauer St., Oklahoma City. Mr. Laubach is well known in the Midwest area, having been active in the LP-Gas industry there for many years.

Fundamentals of Safety In Handling LP-Gas

SAFETY is everybody's job—a never-ending task which must be carried out by every person concerned. Safety cannot be conducted behind closed doors or over conference tables. It must be in the daily programs of every executive, tank truck driver, installation man, service man, consumer, etc.

A haphazard safety program not only costs time and money but does not meet its objective. On the other hand, a well organized safety program, planned and enforced is, in my opinion, the life of the liquefied petroleum gas industry.

We must keep showing the public that LP-Gas is safe, clean and dependable for public consumption. It is the task of everyone involved to carry out and enforce the safety standards which have been proposed for this industry. I might state that the cause of a high percentage of accidents is directly contributed to the over-confident, careless method in which it is handled . . . by taking the short cuts.

In other words, human failures are responsible for the vast majority of accidents that occur. We must improve the operating instructions. Accidents are expensive, unnecessary and preventable.

I will outline some of the safety precautions that are taken by the Atlantic States Gas Co. Let us start with the tank car which has just

By JAY F. SENSENICH*

Safety Director, Atlantic States Gas Co.,
New York City

been spotted at the unloading tower. This siding is insulated from the rest of the main railroad tracks. The siding is grounded to the piping; this in turn grounds the tank car and the pump with the bulk tank which has already been connected to a brass rod driven into the ground.

After checking the car number with our shipping notice, to be sure it is the proper car and for records, we then lock the siding switch or a derailing device. This is to prevent any possibility of a shifter entering the siding while the car is connected. Place signs on railroad tracks between car and switch, "Danger, Tank Car Connected." Blocks are then placed against wheels, both front and back, and brakes are set to prevent car from moving. A check is then made for any open flames or any other source of ignition. The removal platform is lowered from unloading tower to tank car dome. This platform is of adequate width, with a hand railing on both sides.

* A paper delivered at the LPGA—University of Pittsburgh short course, Sept. 9.

A sample of the gas is then taken and an evaporation test is run. This must meet our standards or the car is refused. A check is made to see if the car has sufficient ethyl mercaptan. If not some is added. A nose check is also made to be sure that it was not overlooked by the shipper.

How Tank Cars Are Unloaded

Temperature and pressure readings are also taken. If all is satisfactory the car is unloaded into our 30,000 gallon storage tanks. The gas is unloaded by the use of a compressor through 350-lb. working pressure hoses that connect the tank car to the heavy duty piping of our bulk tanks. The gas goes through a propane gas strainer then into the bulk tanks.

All piping is equipped with relief valves between any two valves, extending 10 feet above them. Menthonal is added to every car of gas to absorb all moisture and prevent freezing in the regulators. Bulk tanks are of 30,000-gallon, 200 lb. working pressure type, equipped with 200-lb. relief valves. All piping outlets are equipped with excess flow valves except the relief valves which are piped to a point 10 feet above the tank. Tanks are securely mounted on substantial fire-resisting foundations.

A sheet of 1/2-inch asphalt insulating material is placed between the foundations and the tank. This makes a tight seal and is caulked twice a year to prevent any water or moisture from getting between the tank and its foundation. All tanks are equipped with an adequate sprinkler system, which is

used to keep the pressure from getting excessive in the tanks in hot weather or for any other emergency that might arise in keeping the tanks cool, so that they will not build up pressure and relieve themselves. All lights, switches and motors are of the explosion-proof type.

Bulk tanks are all equipped with cat walks and guard rails. Guards are built around gauging glasses. There are "No Smoking" signs posted on all sides. Fire extinguishers are placed at convenient places, one outside pump house door, at least one at loading platform and unloading platform. Operator must remain on job at all times. Gauges must be watched continually so that excess pressure is not built up. We also have installed a large, red, explosion-proof light on our unloading tower, which is kept burning during process of unloading.

Procedure After Unloading

Tanks are painted with a light, heat-resisting paint to reduce tank pressure. Upon completion of unloading tank car, valves are closed on storage tanks, etc. The removable hose lines are equipped with bleed valves to relieve the pressure so that they can be disconnected. The hoses are then disconnected and hung on hose racks to better preserve them. These hose racks are kept in the pump house to keep them out of the weather. The lines are then plugged to prevent any leaking of gas into the atmosphere.

A careful check must be kept to see that the bulk tanks are never overfilled.

This is by no means a complete step-by-step description of how to

unload a tank car but merely a rough outline of some of the high-lights and safety precautions.

The correct and safe method of installing a gas system is of utmost importance. In loading the trucks at the plant for delivery—the tanks have all had three coats of heavy weather-proof paint. They are placed on the truck on specially built saddles, which have rubber mountings so as not to harm the paint. Specially constructed guards are placed over the fittings to protect them.

Planning the Installation

In the underground system tanks must always be installed empty. Gas is not put into them until they are completely buried. Upon arrival at the prospective customer's premises it is always advisable to first find out where the appliances are to be placed. It is then the foreman's job to lay out the proper installation of the system.

In the underground system, with the size tanks we use on domestic installations, tanks must be placed at least 15 feet from any buildings and at least 25 feet from wells, and septic tanks and within the required distance for our tank driver to reach from a solid driveway. No tanks shall be placed near any drains, sewer mains or water mains because leakage from the tank or fittings could follow such piping into the building.

If it is necessary to make an installation in cinder fill-in or other corrosive ground, a sufficient quantity of lime chips to counteract it is placed in the hole. Sand can also be used in stone holes to get an

even foundation to help protect the coating. Tanks shall not be installed in driveways. Curb boxes shall be kept level with surrounding ground.

The bottled gas system must be placed at least five feet from any windows, doors or openings in the building.

The tank is then checked for any damage to the coating and repaired before lowered into the hole. The meter is placed in the cellar at a location accessible to the customer for reading and turning off gas, if so desired. The line from the tank to meter is pressure-checked. The vent line on the low pressure regulator is run to a point on the outside of the building at least five feet from any openings in the building. The line is then neatly run from the meter to the appliance. These lines are of heavy gauge copper tubing.

Precautions for Installing Lines

No line shall be placed tight against the ceiling between the rafters, which one usually finds in a cellar, but shall be run at least two inches below the ceiling if run between them. These lines shall not rest against any electric wiring, water pipes, heating pipes, etc. All entrances from outside of building to the inside shall be caulked to prevent any possibilities of gas leaks following the lines. All entrances shall be aboveground.

These lines shall be encased in conduit so that no copper lines shall be exposed on the outside of the building where it would be possible for children to tamper or damage it while playing. Bug screens shall be placed over all vent lines

to eliminate the possibility of anything getting into and clogging them, thus affecting the pressure.

No copper lines shall be concealed in partitions due to the possibility of lines becoming punctured. After connecting the appliance, another pressure test shall be run on the lines from the meter to the appliance. After the line tests have all proved satisfactory and appliances are connected, a test should be run with the appliance connected. This may be done by the use of a manometer, by connecting it to the orifice, turning on the gas, filling up the lines with pressure, and then shutting it off again at the meter or bottle, allowing it to remain off for approximately 10 minutes.

If pressure remains the same on manometer you may feel sure there is no leak. Of course, all valves and pilots must be turned off except the one to which the manometer is connected to. You may also check for large leaks by checking the prover hand on the meter. If a leak is discovered it must be checked out by the use of soap suds, not with a match.

Test Appliances at Plant

It is understood that all new appliances are carefully uncured and tested for burner and heat control adjustments before leaving the plant. This precaution avoids the possibility of having to repair on consumer's premises a piece of equipment damaged in shipment.

The location of a stove is very important. It should not be placed where there will be excessive draft as there may be a possibility of pilots blowing out, causing a dis-

satisfied customer. Be sure to note if there are any curtains close by which may blow over the burner. Every burner is checked and adjusted after installation to insure proper and safe operation.

Importance of Burner Adjustment

It is very important that you have quick ignition of all burners by the pilot. The adjustment of the oven burner for the proper amount of gas and air for quick ignition is of even greater importance. The oven thermostat must always be checked with an oven thermometer. This, of course, should have been done before the stove left the plant.

Refrigerators must be installed level and far enough from the wall to allow for proper air circulation around the condensers as well as sufficient head room. A valve should be installed in the line ahead of the refrigerator burner.

Water heaters are provided with proper vents for products of combustion through vent pipes or stacks to the outside to eliminate the contamination of air within the house. A gas shutoff valve must be installed ahead of all water heaters. It is a policy of our company to refuse to connect any water heater that does not have a thermocouple type, 100% shutoff.

There are quite a few old type water heaters in the field in which the pilot heats a metallic strip which in turn holds open the valve. We have found this type shutoff is not always positive, due to drying out of packing and burning of metallic strip. On this type water heater a new positive shutoff, pilot

and thermocouple must be installed before we will connect. It must also have a temperature and pressure relief valve installed in the water line.

There must be an ample supply of air for combustion to give satisfactory service.

Customer Instruction Is Vital

One of the most important factors we have is customer education in the proper use of gas appliances. You must know the correct operation of the appliance you are trying to explain. First instruct the customer how and where to shut off the gas, then give a complete demonstration of the operation of the stove. Explain the principles and operation of all top burners. Have the customer actually operate the valves. Then continue your demonstration to the proper operation of the oven.

This has been one of the most difficult things to get the customer to follow correctly. You cannot impress too strongly the importance of lighting the match first and then turning on the gas. I noticed that some manufacturers are now using automatic oven ignition with 100% shutoff valves on them. I believe in the near future that all manufacturers will follow suit. If at all possible have the customer light the oven so that you are convinced that they thoroughly understand the operation.

The customer should be shown how to shut off the gas valve on the water heater; also, how to regulate the thermostat. You may also save yourself a call-back by explaining to the customer that there will be

condensation in the bottom of the water heater when you first light it, with cold water in the tank. They usually suspect that the heater is leaking. This will all dry up just as soon as the water becomes warm.

A full explanation of the operation of a refrigerator, as to how to turn off the gas, how to defrost and relight should be given the customer.

The Atlantic States Gas Co. has a safety program set up as follows: A safety director in charge of all areas; under him are two safety chairmen in each area—one responsible for the field work and the other for bulk plant operations. The bulk plant operations include the safe unloading of tank cars as well as all other safety operations in regards to tank coatings, testing of all tanks, testing of all fittings, proper loading of trucks, handling of appliances, truck maintenance and numerous operations about the bulk plant.

Duties of Safety Chairman

The safety chairman in the field spot checks numerous installations, checks tank fillings as well as seeing that all men meet with his approval in being capable of handling the job before they are allowed to go out on their own. He also notes the careful operation of other drivers. There are regular schools conducted by the local chairman for installation crews and service men.

At these schools an appliance and controls of all types are hooked up on our special experimental bench. They are all completely torn down and then rebuilt. We also conduct

a committee meeting which is held once a month with one man from each phase attending. They are requested to bring in at least two safety improvements or suggestions on their particular work.

We have one general safety meeting per month, which is attended by all operating men. At this meeting slides are shown on safe driving and proper use of tools, etc. Inspection reports are reviewed. Any new problems that may have arisen in any other area are also reviewed. Pictures are taken of spot check installations. Good features as well as bad are pointed out to the men.

The safety director's report goes directly to the president of the company, Col. Geo. A. Burrell, who acts as chairman of the general safety committee. The latter meets and reviews all safety work and reports, each month.

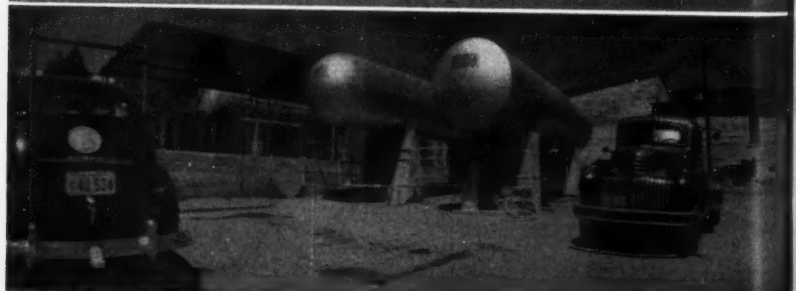
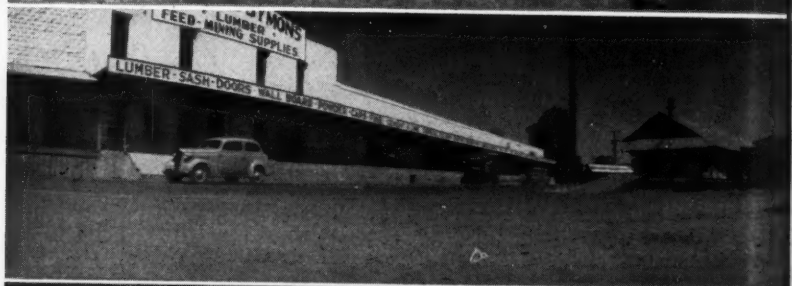
Safety Booklet Covers Appliance Installations

Completing two and a half years of study, planning, and organization work, the safety committee of the AGA Testing Laboratories has prepared safety procedures to be followed in testing and research operations dealing with gas and gas appliances.

An interesting and informative booklet, "Safety is our Business," has been issued discussing such subjects as the importance of good housekeeping and procedures to be followed when working with various types of gases, as well as the installation, handling and testing of appliances. It is primarily intended for use by the AGA Laboratories staff and visiting manufacturers' representatives, but contains information of value to organizations engaged in appliance testing or research.



A twin barrel bulk delivery truck operated by the Gallup Mercantile Co., Gallup, N. M. The truck has two 1100-gal. water capacity propane tanks mounted on a Mack chassis.



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Cylinder Room Hard to Find In Old Mining Camp

SERVICE to two "frontier" industries forms the nucleus of LP-Gas operations in rugged Tuolumne county of California, where Hales & Symons distribute liquefied petroleum gas to the gold-mining and lumber industries.

Sonora—in the heart of the Mother Lode country that drew gold-seekers from all over the world a hundred years ago—is the site of the company's facilities. In addition to LP-Gas, Hales & Symons also market building materials, hardware, feed, mining supplies—a sort of "general store" distribution of the necessities of industry and life in a country where almost all enterprise is out-of-town enterprise.

Now, however, because of the growth of the cylinder sale and LP-Gas delivery operation, Hales & Symons are consolidating their appliance and gas interests in a new company — Hales & Symons Fuel & Appliance Co. They will incorporate this new organization for an estimated capital of \$100,000.

The company's present LP-Gas facilities are spacious (covering an area the size of a city block) and equipped with such modern conveniences as a public address system, with which any part of the plant can be reached. Recently, a 10,000-gal storage tank has been placed beside a railroad siding just north of Sonora, and will serve as a standby storage facility.

Opposite page: Views of bulk plant, offices, shipping dock, and cylinder filling platform of Hales & Symons at Sonora, Calif.

BY PAUL W. HOWER, JR.

Charles, Ryan & Rivers, Inc., Los Angeles

Apparently the gold-hunting fathers of Sonora weren't told that LP-Gasmen would enter into the city's industrial scene a century after they planned the city—Hales & Symons list as one of their major problems the lack of available space within the town for locating customers' cylinders. This might lead to the installation of a central distribution system before long.

I. J. Symons now operates the company, having inherited it from his father. He served as a Naval staff officer in World War II and saw action in the Pacific theatre.

LP-Gas Regulations Revised In Saskatchewan, Canada

Labor Minister C. C. Williams has announced that recently-revised regulations governing the sale, storage and use of liquefied petroleum gas in Saskatchewan, Canada, may now be obtained in pamphlet form from the labor department's boiler, factories and elevator inspections branch at Regina.

At present there are approximately 500 distributors and distributors' agents and several hundred installations in service in the province.

Changes in the revised regulations provide also for annual licensing of all distributors, agents or others in selling or distributing the petroleum gas or installing required equipment, and in addition there is a small annual fee for each installation serviced.

THE SINCLAIR PLAN FIG 1

"A PROPOSED IDEAL PLAN OF LPG DISTRIBUTION FOR SINCLAIR DISTRIBUTORS"
SUITABLE PRIMARILY FOR PROPANE BUT ADAPTABLE TO B-PMIX WHEN SUMMER-WINTER VAPOR PRESSURE
RANGE FALLS BETWEEN 90 & 100 POUNDS

EXAMPLE

A CONSUMER REQUIRES 1800 GALLONS OF GAS PER YEAR, 900 OF WHICH WILL BE NEEDED DURING DECEMBER,
JANUARY AND FEBRUARY - THE REMAINING 900 GALLONS DURING THE YEAR, AS SHOWN BELOW -

TO DETERMINE THE MINIMUM REQUIRED STORAGE:

TOTAL WINTER REQUIREMENTS (900 GALS) LESS 2/12 OF YEARLY REQUIREMENTS (900 GALS) OR 800
(IN ADDITION, WE RECOMMEND A 15 TO 20 PERCENT EMERGENCY RESERVE)

STORAGE BUILD-UP PERIOD												PEAK DEMAND PERIOD		
MONTH	MARCH	APRIL	MAY	JUNE	JULY	AUG.	SEPT.	OCT.	NOV.	DEC.	JAN.	FEB.		
DELIVERIES	150	150	150	150	150	150	150	150	150	150	150	150		
REQMTS.	150	120	100	60	40	60	100	120	150	280	340	280		
PLUS-MINUS	0	+30	+50	+90	+110	+90	+50	+30	0	-130	-190	-130		
STORAGE AS OF FIRST	150 	150 	180 	230 	320 	430 	520 	570 	600 	600 	470 	280 		
STORAGE AS OF LAST	0 	30 	80 	170 	280 	370 	420 	450 	450 	320 	130 	0 		

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What Uniform Monthly Deliveries Would Do to Balance Load

THE Sinclair Plan* sets up a rule-of-thumb procedure whereby each consumer's storage needs can be based upon his yearly requirements and upon the consideration of deliveries continuing through the winter at the same rate as during the summer.

It is one company's idea of how to solve the problems connected with regular all-year production and peak-period demands by many consumers. It calls for an added effort to land numerous smaller customers who, in many cases, are being passed up by dealers in their efforts to sell large enough storage to carry a heating customer through the winter months.

In regard to the size of installations, Mr. Storm said, "We now believe that we have made a mistake by requiring that new installations be large enough to carry the consumer through the winter without a fill. This approach may be somewhat easier and meet with less sales resistance than convincing the old customer of the neces-

Advantages Claimed for Distributor

1. Even billing—even deliveries
2. Transportation economy — manpower economy
3. Consumer loyalty to supplier
4. Consumer carries the investment in product and storage

Advantages for Consumer

1. Assurance of winter fuel supply
2. Even monthly gas bills
3. A single supplier
4. Consistent product quality

sity of supplemental storage. How many installations have been lost because of this approach to the problem is not easily disclosed.

"We think that many new systems might have been sold and filled during the past spring and summer had we realized the need for less costly installations using smaller tanks, definitely designated as 'suitable only for cooking, refrigeration and hot water heating.' A 250 gallon tank could be excessively large to accommodate an exclusively cooking, refrigeration and

* From material presented to the Oklahoma LP-Gas Association in a Sept. 13 speech by John A. Storm, sales manager, Sinclair Prairie Oil Co., Tulsa.

hot water heating load and a summertime fill would carry the consumer well into next summer. This tank could have been filled upon installation at about regular retail prices of fuel for larger tanks."

How limited and large gas users can be accommodated on a monthly delivery plan is shown in the accompanying "Sinclair Plan."

For example (as shown on chart):

If a consumer requires 1800 gallons of gas per year, 900 of which will be needed during December, January and February, and the remaining 900 gallons during the balance of the year; the formula for determining the minimum storage would be:

Total winter requirements (900 gallons) less $2/12$ of yearly require-

TABLE 1

When "Peak Demand Period" is:	The Formula for Determining Minimum Storage Will Be:
2 months	Total winter requirements less $1/12$ of yearly requirements
3 months	Total winter requirements less $2/12$ of yearly requirements
4 months	Total winter requirements less $3/12$ of yearly requirements
5 months	Total winter requirements less $4/12$ of yearly requirements
6 months	Total winter requirements less $5/12$ of yearly requirements
(Etc.—subtracting $1/12$ less than the number of months duration of peak demand period)	

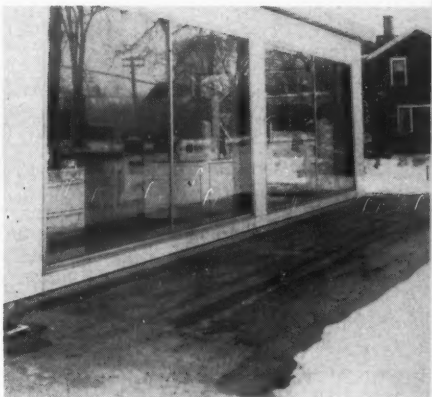
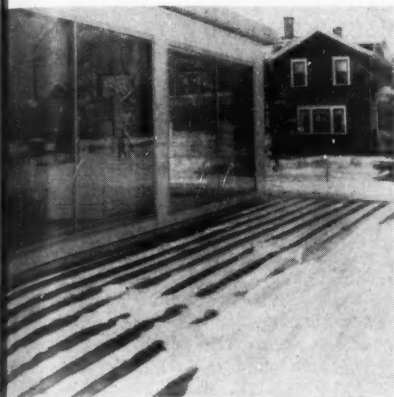
To calculate the **minimum** storage required in order to use the "Sinclair Plan" you must first determine three facts pertaining to each customer:

1. His yearly requirements.
2. His total requirements during the "peak demand period."
3. Length of "peak demand period" in months.

After these facts are known, you can easily calculate the **minimum storage required** by applying the simple formula in Table 1.

ments (300 gallons) or 600 gallons.

Since this 600 gallons is the minimum storage space required, leaving storage empty at the end of two consecutive months, it is recommended that approximately 15% to 20% be added to insure an emergency reserve at all times, and eliminating the empty tank on the last days of February and March (as shown on the chart). To be completely secure, this customer should have at least a 690-gallon storage tank instead of the 600 gallons shown.



To the delight of the office boy, there is no shoveling needed where sidewalks are heated by LP-Gas.

Snow Is No Problem Here

40 Minutes After Storm is Over, Walk is Clear

WHAT happens when an under-the-sidewalk snow melting system undertakes to clear a 4-inch snowfall is shown in these pictures. The picture on left illustrates how the melting proceeds as hot water, with anti-freeze added, flows through pipe embedded in the concrete walk. Note there is no run-off of water. The snow melts and water quickly evaporates.

The picture at right was taken 40 minutes later. All snow has disappeared and the sidewalk is virtually free of moisture.

These pictures were taken at the Protane Gas Service Co., Erie, Pa., a subsidiary of the Protane Corp., retailers of LP-Gas and stoves, refrigerators and other home appliances.

The sidewalk equipped with the system is 12 ft. wide and 51 ft. long.

The system consists of a Ruud gas water heater and lengths of 1-in. wrought iron pipe spaced 1 foot apart.

Sumner Propane Plant Will Cost \$125,000

Sumner Propane Gas, Ltd., of Moncton, B. C., has received its charter, according to M. P. Fraser, its president, who is also vice president of Sumner Co., the parent company.

Cost of erection of the company's new plant at Victory Industrial Center, Moncton, will be about \$125,000, Mr. Fraser states. A tentative list of officers of the new firm shows H. L. Hill, vice president; J. K. McCafferty, secretary; and R. P. Dickson, and Miss R. Sumner, directors.

Training Courses Provided For Texas Service Men

AMONG the growing pains of the comparatively new butane industry was the problem of orienting and training its personnel in the handling of LP-Gas and in the installation of equipment. The solution of this problem did not keep pace with the rapid advances being made by the industry. This resulted in excessive expenses in service calls, reinstallation, and, in some cases, disastrous accidents.

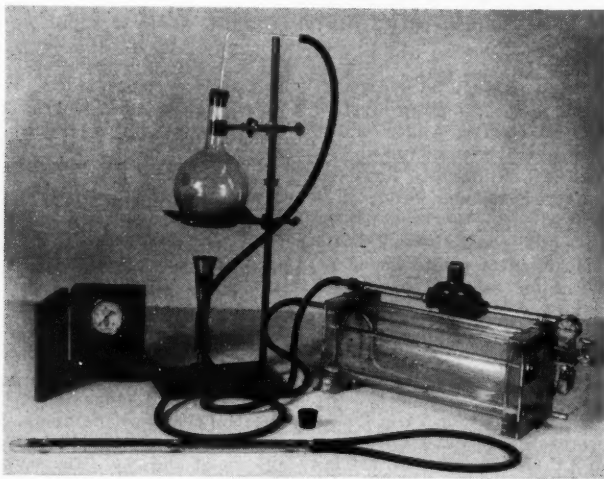
Texas is solving this problem through the combined efforts of the LP-Gas industry, the Texas Butane Dealers Assn., the University of Tex-

By **PAUL J. PHILLIPS**

University of Texas, Austin, Texas

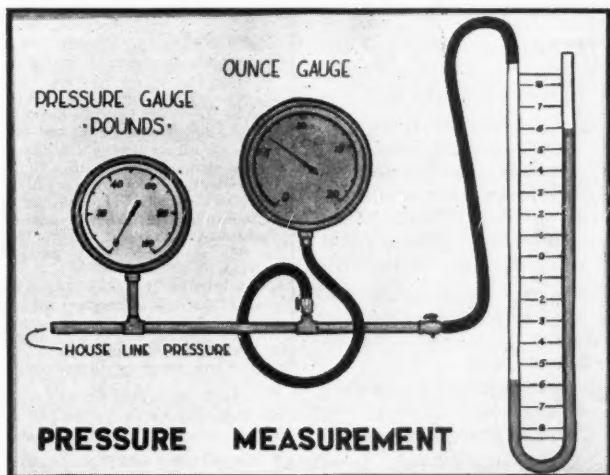
as, and the State Board for Vocational Education, with the cooperation of the Texas Railroad Commission and the insurance underwriters. A conference of the representatives of these groups decided upon a training program which was to be conducted by the University of Texas.

The first course is brought to the dealers in their various communities and is directed by trained, experienced men. The 10-hour course is usually



Demonstration equipment used in butane service training course at University of Texas.

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Pressure measurement gauges demonstrated by chart.

conducted in four evening sessions of 2½ hours, or to suit the group. The number of students varies from 10 to 25 per class. The average is 16. Enrollment is limited to the dealers, service men, truck drivers, and installation men.

The course consists of demonstration, instruction, and discussion of the following subjects:

Characteristics of LP-Gas.

Equipment — containers, fittings, piping, etc.

Transporting, storing, dispensing.

Fire prevention and control.

Appliances.

Customer information.

Trouble-shooting.

The instruction is augmented by a kit of portable training aids consisting of a 9-piece demonstration unit (fuel container, regulator, stoves, etc.); 10

cut-away valves, gauges, etc.; 11 colored charts and 6 sets of "pass-out" sheets.

"How do you get a class started?" is a frequent question. This is the usual routine: The instructor in an area informs the Texas Butane Dealers Assn. two weeks in advance as to the towns in which he plans to set up classes. The TBDA office mails the information to all of the dealers in those towns and in the surrounding towns (up to 40 miles).

On a weekend the instructor calls on the dealers in the area and makes arrangements for a place to hold his class, such as the fire station, city hall, schools, etc. In nearly every case, the dealers have cooperated whole-heartedly in this promotional work.

To evaluate the training from a

dollar-and-cents viewpoint is impossible, but the demand for and reception of the course give evidence of its worth. Numerous contacts and letters from the towns in which the training classes have been held verify this. The constant requests for the classes indicate the interest in the program. By the end of 1948, 450 of the estimated 700 truck licensees and installers will have been represented in the classes, a total of 113 classes will have been held, representing approximately 230 towns, and 1700 men will have been trained.

The 230 towns represent a complete coverage of the state of Texas—El Paso on the west, Perryton on the north, Linden to the northeast, Beaumont to the southeast, and Harlingen and Weslaco in the Rio Grande Valley, and all intervening towns where LP-Gas is used.

This training will be followed up by the offering of a new 10-hour

FOR SEVERAL YEARS Texans have been in the forefront in providing service training and safety courses for LP-Gas dealers and employees. The Texas Butane Dealers Assn. has been a leader in this direction and training schools have been carried to all sections of the state.

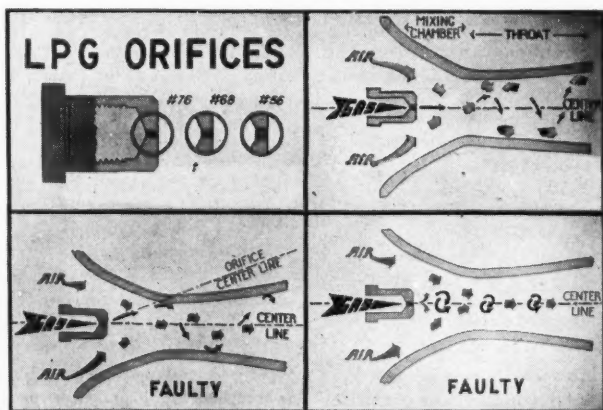
Last summer the training program for the following year was outlined to the Association by Paul J. Phillips, specialist in industrial instructional material of the University of Texas at Austin. The accompanying article shows the details of the program.

The attitude of Texas toward the problems of service and safety is one which may well be emulated by other states.

—Editor.

course which will consist of request units—partly an expansion of material in the first course and partly new material. The first course will be continued for those who request it for the benefit of the new men and those unable to attend the first time.

The Texas training is extended fur-



Orifice charts used in the service training course.

ther by an annual one-week LP-Gas appliance short course at Texas A & M College. This course provides condensed training under controlled schedule conditions for the service men. The week is spent in two general types of training: Specialized and work periods. The specialists cover specific subjects such as heat calculation (by a Warm Air Institute representative) and automatic controls (by an industry representative). The work periods provide laboratory setups where the men can actually work with LP-Gas equipment under the supervision of their instructors. For example, manufacturers' representatives direct the men while they work on Servel adjustments or butane pump operations.

The success of the program is due to the fine, cooperative spirit of all concerned in the industry. The Texas Butane Dealers Assn. and its executive secretary, W. J. Lawson, have generously given help whenever needed as well as financial backing. The manufacturers have contributed time and equipment; the Railroad Commission and the insurance underwriters have given continual guidance and have assisted with the designing and promotion of the program.

AGA Appliance Directory Will Appear Semi-Annually

Starting Jan. 1, the Directory of Approved Gas Appliances & Listed Accessories of the AGA Testing Laboratories will be published in complete form on a semi-annual instead of a quarterly basis and will be distributed to subscribers each January and July.

Changes in listings and new approvals of appliances and accessories made during the intervening months will be listed in a monthly supplement

to the directory in the same manner as in the past. The subscription price of \$2 per year remains unchanged. Single issues will sell for 75 cents per copy and the monthly supplements will continue at 10 cents per copy.

The directory has been used for a number of years in checking gas appliances installed under conditions where compliance with local regulations or those of qualified testing organizations is required. It is circulated among utility companies, manufacturers, dealers, and others interested in the purchase and sale of gas burning appliances.

Death Takes Wm. L. Hauck, Widely Known Among Gasmen

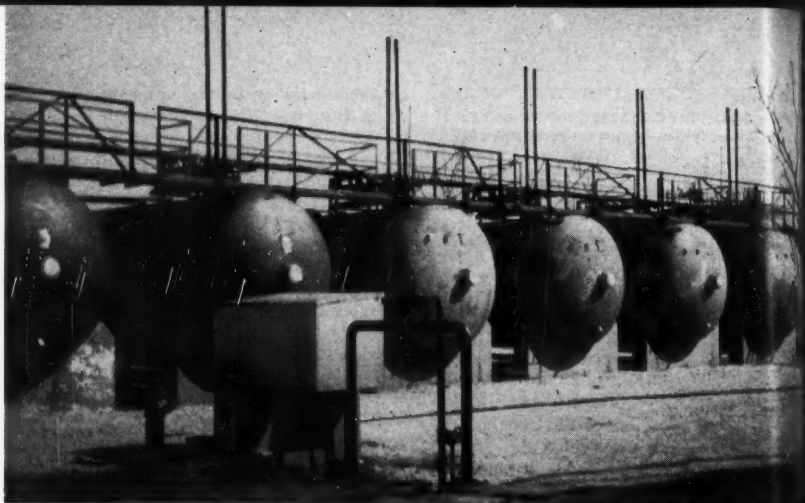
William L. Hauck, identified for many years with the liquefied petroleum gas industry, passed away the first week in December. He was buried at Farmingdale, Long Island, on Dec. 7.

Mr. Hauck was for many years associated with the Scaife Co., Oakmont, Pa., but went to California for his health in 1944. After remaining there about a year he returned east and joined the Trageser Copper Works. At the time of his death he was with the cylinder department of the Weatherhead Co., Cleveland.

Bill, as he was universally called, probably had as wide an acquaintance among LP-Gas manufacturers and salesmen as any man identified with the industry. He spent many years traveling about the country interviewing dealers and distributors.



BILL HAUCK



Above: The six 30,000 gal., water capacity, propane, storage tanks of the Kokomo Gas & Fuel Co., Kokomo, Ind., standby plant. Below: One 4 in. and two 6 in. injector assemblies.



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Kokomo Standby Now Ready For a Hard Winter

THE Kokomo Gas and Fuel Co., of Kokomo, Ind., is preparing to enter its second winter with its new propane-air standby facilities.

The installation, designed and engineered by Phillips Petroleum Co., with equipment purchased through them, was initiated in July of 1947 as a result of a growing need on the part of the utility to provide standby service to its existing natural gas facilities. Many delays were encountered during the installation of the new facilities, but the plant was operated for several days during the severe portion of last winter and in January of 1948 the plant was entirely complete.

The new propane gas storage facilities include six 30,000-gallon water capacity propane storage tanks with a tank car siding adjacent. Fuel is unloaded through a Brunner LP-Gas unloading unit. Liquid propane passes through an all-welded piping system from the storage tanks and vaporized in four 13" diameter x 4" long multitubular heat exchangers; the vapor is regulated to 30 psi pressure through two 4" Reliance CBV regulators.

Gas making facilities include a provision for the manual production of 1000 Btu propane-air gas to serve as standby and for peak sharing of 1000 Btu natural gas. The mixers consist of one 4" and two 6" Eclipse special injector assemblies having a combined rated capacity of 237,700 cubic feet of 1000 Btu propane-air gas per hour. The output from the Eclipse injectors is fed to the inlet

By J. R. STROTHER

Phiigas Division, Phillips Petroleum Co.,
Bartlesville, Okla.

of an Ingersoll-Rand gas booster and provides gas main pressure of 15 to 20 psi.

In addition to the new propane standby facilities, Kokomo maintains for emergency use its existing oil-gas producing facilities which have a capacity of 40,000 cubic feet per hour. The plant also has 850,000 cubic feet of natural gas holder storage available to customers of the Kokomo Gas and Fuel Co.

So. Calif. Meter Assn. Stages Important Show

The Southern California Meter Association's 21st annual Measurement and Control Instrument Exposition, held at the Long Beach municipal auditorium last fall, was eminently successful, with crowds of engineers, executives, and field and plant operators in attendance. Demonstrations were given of many different kinds of the latest equipment used in gas utilities, gasoline plants, and gas and oil field work, as well as equipment designed specifically for the measurement and control of gases and liquids.

James E. Gesner, of Reliance Regulator Corp., was general chairman of S.C.M.C.'s exposition committee. George W. Stevenson, American Meter Co., handled the publicity for the two-day show.

IT'S READY!

This up-to-the-minute, 60-page catalog in color is a "must" for every tank fabricator, bulk plant operator and dealer in the LP-Gas industry. Profusely illustrated, it contains detailed diagrammed sketches covering the complete Weatherhead line of LP-Gas equipment as well as a wealth of technical data. It's free—send for it today!

The Mark



of Quality

The 1949 Weatherhead LP-Gas Equipment Catalog

The 1949 LP-Gas Equipment Catalog contains data on:

VALVES

MANIFOLDS

GAUGES

ASSEMBLY UNITS

REGULATORS

CYLINDERS

MULTIPLE HEADS

FITTINGS

Look ahead with

Weatherhead

THE WEATHERHEAD COMPANY, CLEVELAND 8, OHIO

Plants at Cleveland, Ohio

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Advertising Department
The Weatherhead Company
300 East 131st Street
Cleveland 8, Ohio

Gentlemen:

Kindly send me without charge your 1949 "LP-Gas Catalog".

Name.....

Company.....Title.....

City.....Zone.....State.....

Special Problems Follow Conversions

WHEN the conversion of an entire city like Sherbrooke, Quebec, from manufactured gas to propane-air is undertaken, the men handling the conversion work encounter numerous problems. Some problems are routine. Others require special handling.

The engineers of American Gas Conversions, Inc., who handled the Sherbrooke conversion job have made available to BUTANE-PROPANE *News* information on what some of these problems consisted of and how they were solved. American Gas Conversions is a subsidiary of Pacific Gas Corp. which installed the Sherbrooke plant.

As reported in a previous issue of BUTANE-PROPANE *News*, the new propane-air plant, which includes three 30,000 gallon propane storage tanks, has replaced water-gas equipment. Serving over 6,000 meters, the new plant is sending out gas of 900 instead of 450 Btu.

Many of the problems faced and met by American Gas Conversions on this job doubtless are similar to others which might be met on both large and small conversion jobs to either propane-air or to natural gas. They are therefore worthy of study.

The bulk of the conversion work in any city is likely to be done on household appliances. Much of this work is rapidly becoming standardized. The special problems presented here, however, concern principally industrial and commercial users of gas. The following is an account of some of these problems met in Sherbrooke and how they were solved:

These were met at the Filigrane Specialty Co., manufacturers of jewelry:

Problem: Jewelry torches used for soldering. It is necessary to have a small intense flame. Propane-air gas would not hold onto the old torches and the regular Anderson and Forrester torch was too heavy for the girl operators to use.

Solution: Anderson and Forrester dual control torches were cut off in front of the air and gas controls, or valves. A hose was fastened on the tube in front of the controls and the other end of the hose was fastened to the rest of the torch. A handle was placed on this part of the torch and resulted in a light weight torch that still retained the feature of having the gas and air controls.

A No. 0 Anderson and Forrester tip was used for fine work and where a larger flame was desired a No. 1

Anderson and Forrester tip was used. The part of the torch that had the controls was fastened to the bench. Due to the fact that the torches are used constantly, it is only necessary to make an adjustment in the morning. When the torch is not being used by the operator it is placed on a rack with the flame pointing away from the operator. This work was done the night before propane was turned into the section and the company did not lose any time because of the change. A total of 26 torches was changed.

Problem: Pre-mix pot furnace. Flame would lift off with propane-air gas.

Solution: Tapped out old ports and placed in blast tips.

Problem: Dewaxing oven. Necessary to maintain an even flame.

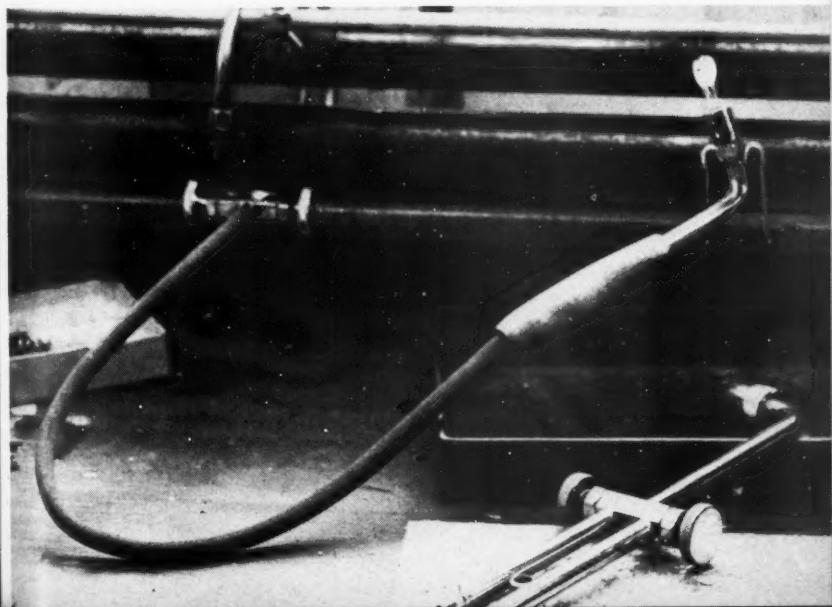
Solution: Drilled burners and changed size of orifice.

The following problems concerned Canadian Sturdy Chain, also manufacturers of jewelry:

Problem: Same as the first problem of Filigrane Specialty Co., described above, except that torches used gas savers and consequently it was necessary to have a torch that would cut off the air and also burn with a small minimum flame when not being used. Furthermore, operators used a lighter torch than the one used by Filigrane and consequently the above solution would not work.

Solution: The old torches were used and an Anderson and Forrester No. 48-S blast tip was sweat onto the end of the torch. This tip gave a fine tipped flame. In addition, where

Divided Type of Soldering Torch



a larger flame was desired it was necessary to sweat on a No. 0 or a No. 1 Anderson and Forrester tip. Because the tips were sweat on they could not be interchangeable as in the case of the ones used at Filigrane. This work was done by picking up a few torches each day and fixing them. Since the new tip worked as well on the old gas as on the new gas it was possible to have all the torches converted before the propane was introduced into the section and work was not held up for the operators. Fifty-two torches were changed.

Problem: Acid pot heaters. Old burner would not burn propane gas without lifting or smothering.

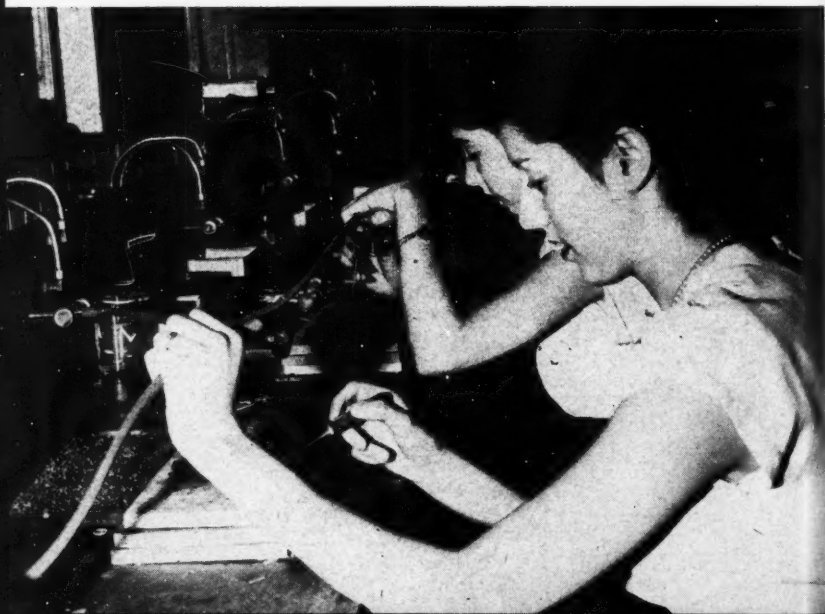
Solution: Old burner had straight ports. Ports were reamed and tapped. A piece of $\frac{1}{8}$ -inch pipe was screwed into the port. Anderson and Forrester

No. 2 tips were screwed onto the pipe. This resulted in a burner that retained the propane flame. It was also necessary to raise the pot $2\frac{1}{4}$ inches higher because of the additional space used up by the tips and also to keep the flame from smothering out. This was done by using a piece of 6-inch cast iron pipe. The result was that where it used to take 10 minutes to bring the acid to a boil it could be done in two minutes with the new burner.

The following problem and solution occurred at La Tribune newspaper:

Problem: Retaining flame on static burner on press. The burner consists of a long pipe with a row of ports. The burner moved with the machine and consequently it would not retain the propane flame.

Costume Jewelry Workers Use Propane



IMPROVED!

REGO^{*}

No. 2418 Series

MULTIVALVES^{*}

Now, there are more reasons than ever before why you should specify REGO No. 2418 MULTIVALVES for your stationary bulk delivery systems!

You Still Get These MULTIVALVE Advantages!

Only one connection is required to install a RegO MULTIVALVE to the container, resulting in lower installation costs and the elimination of hazardous leaks.

Flexibility that meets the specifications for virtually all types of installations: above-ground or underground—vapor or liquid withdrawal—cylindrical or spherical containers.

Pioneering know-how that dates back to the days when RegO developed the very first multiple-type unit head.

Shipped complete and tested, ready to install—eliminating costly performance tests of individual fittings after systems are assembled.

Listed by Underwriter's Laboratories.

You Also Get These Improvements!

Increased relief capacity is provided by larger body passages and the use of larger safety relief valves. RegO No. 2418 MULTIVALVES are now available for aboveground containers up to approximately 1,000 gallons capacity and underground containers many times larger.

Protective caps are available for the safety relief valves to safeguard against the effects of weather and dirt. "Friction-fit" holds them in place, and they are designed to allow initial leakage to escape, yet to "fly off" so that full discharge is unrestricted in the event valves should "pop" wide open. Caps are chained to the relief valve body to eliminate loss.

A special elbow is provided when a second safety relief valve is required. It is designed to give compactness and to position the valve upright.

You Can Get Every One of these Operational Features on REGO No. 2418 MULTIVALVE Outfits

1. Safety Relief Valve.
2. Double Check Filler Valve.
3. Liquid Level Gauge (float or slip tube, as desired).
4. Vapor Return and Excess Flow Valve.
5. Safety Relief Valve.
6. Pressure Gauge.
7. Service Outlet Valve.
8. Heavy Duty Forged Brass Body.
9. Selector Valve—for vapor or liquid service.
10. Fixed Tube Liquid Level Gauge.
11. Regulator Assembly, including regulator, pigtail, expansion coil and bracket.

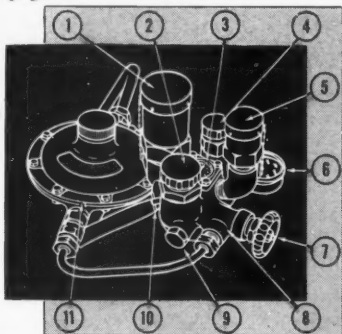


Fig. 1: S. Pat. Off.



PIONEER AND LEADER IN THE
DESIGN AND MANUFACTURE OF
PRECISION EQUIPMENT FOR USING
AND CONTROLLING LP-GASES

The **BASTIAN-BLESSING** Co.
4301 W. Peterson Ave., Chicago 30, Illinois

Solution: A pipe was cut with a 3/32-slot and this was used to replace the old burner. In addition, shields were placed over the burner to protect it from drafts. As a result the burner worked satisfactorily.

The following occurred at Day-Nite Neon Co.:

Problem: Cross-fire burners would not retain flame and when adjusted to a smaller flame caused the lead glass to turn black.

Solution: New tubes were placed in the cross-fire burners.

Problem: Ribbon burners burned evenly in the center but lifted on both ends.

Solution: Changed the drilled brass orifice screen on the top face of the burner.

The following occurred in connection with Belanger ranges:

Problem: The Belanger ranges in Sherbrooke have slotted insert burners similar to the burner used by the "Magic Chef" except that the insert is made out of cast iron. If sufficient gas was given to the burner using propane, the burner would burn with a yellow flame.

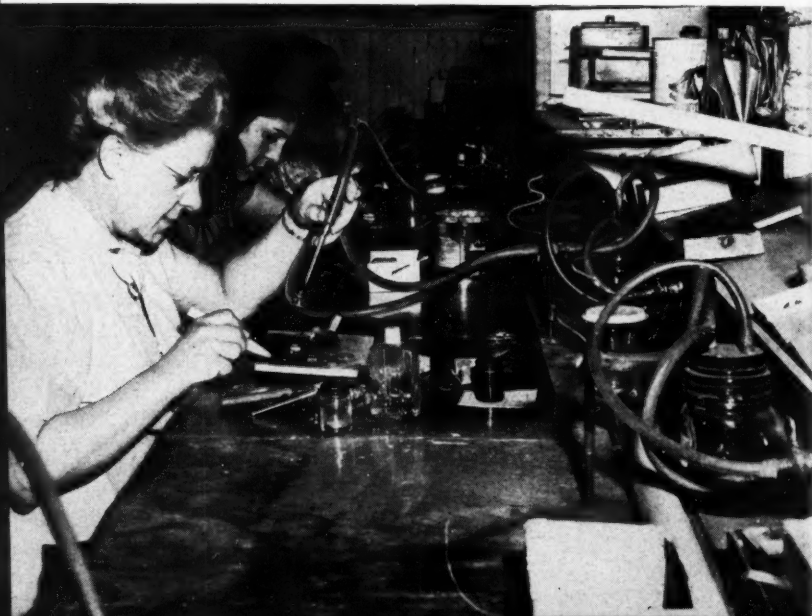
Solution: It was necessary to mill each burner so that the slots were larger.

The following additional problems were encountered by American Gas Conversions, but are listed by them as not special problems but just routine procedure:

At the Protestant Board School:

Problem: Twenty Bunsen burners.

Soldering Jewelry with Propane-Air



Solution: Replaced with Anderson and Forrester Bunsen burners.

Mont Notre Dame School:

Problem: Forty Bunsen burners. In this instance it was desired to continue using the present Bunsen burners.

Solution: Converted Bunsen burners using conversion tubes.

Dentists and dental laboratories:

Problem: Replacing dental torches and Bunsen burners.

Solution: Replaced dental torches with new torches. Either converted or replaced Bunsen burners. Replaced orthodontic Bunsens.

Restaurants:

Problem: Converting appliances without interrupting the work.

Solution: Pre-drilling beforehand and working on appliances while the cook was at work too. The conversion man would put on asbestos gloves and work on certain burners while the cook was using others.

All the above problems occurred in Sherbrooke, Quebec. The following were encountered in Grinnell, Iowa, another conversion job handled by American Gas Conversions, where there is a high pressure system using individual house governors to reduce the pressure:

Problem: Sticking regulators.

Solution: Cleaning regulators and adjusting them. This was handled by the utilities, but it created a problem also for those handling the conversion,

Acid Pot Heater Burning Propane



since they had to return to each job at least twice.

Newspapers and printing shops:

Problem: Keeping equipment such as lead pots, linotype machines, etc., going without interfering with getting out the news.

Solution: Some of the work was done beforehand and some after the paper had gone to press. Usually one of the conversion men went to the shop the first thing in the morning, to adjust the burners, so they could be used until after the paper had gone to press, and then the burners were converted.

A machine shop truck is used in connection with jobs of American Gas Conversions. It has been of service primarily in the following ways:

Drilling oven burners that are too difficult to drill with a hand drill. Machines on the truck do the job. Approximately 20 burners are drilled each day. This is about 20% of the ovens converted each day.

Rebuilding broken burners. About five burners are fixed each day by welding and brazing. They may be broken before the conversion man arrives, but it would be difficult to convince a housewife of that.

Fixing torches. All torches such as those in the jewelry shop above were fixed in the truck.

Drilling Belanger top burners. Although most of the Belanger top burners are milled, it is possible to drill the slots, and this is done in some cases.

Supplies. The truck carries all the supplies necessary for the job, and this saves time.

1949 Water Heater Promotion Will Be National Campaign

Final details for one of the most comprehensive cooperative sales and promotional campaigns ever developed for the automatic gas water heater industry, was completed at a special meeting of the Gas Appliance Manufacturers Assn's., gas water heater division held Dec. 2, in Chicago.

Practically everyone who has anything to do with the sale of automatic gas water heaters will be given a chance to participate in the nationwide drive during 1949, it was stated by Stanley C. Gorman, sales promotion director of GAMA's gas water heater division, sponsors of the project.

Hundreds of prize awards will be presented quarterly and at the end of the year's campaign. One of the final prizes is a new Buick sedan. These prizes will be presented to water heater salesman of every category of selling in the automatic gas heater field.

The unique sales effort will be known as the "Court of Flame" automatic gas water heater sales contest. It was scheduled to begin Jan. 1.

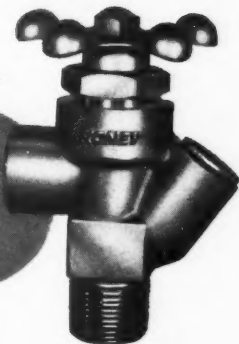
The drive for gas water heater sales next year also will have the continuous support of large advertising programs by the American Gas Assn. in addition to advertising and promotion backing from the manufacturers and GAMA.

Leland M. Feigel, Servel, Inc., Evansville, Ind., is chairman of the GAMA gas water heater division which has been developing the 1949 promotion.

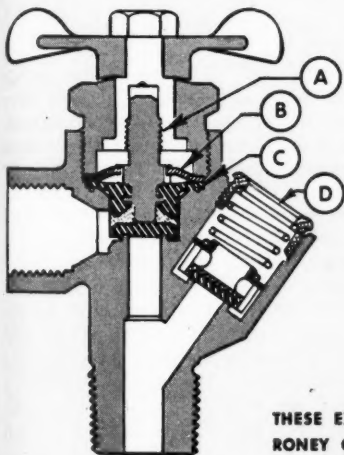
Details of the contest and promotional material will be made available to 40,000 water heater dealers, 18,000 LP-Gas dealers, and 5000 utility sales personnel as soon as possible.

Roney

CYLINDER VALVES INVITE COMPARISON



*Note the following
exclusive Roney features*



A Positive opening valve with stem threads protected from the elements—clean threads last longer.

B Back-up washer serves as stop for flexible diaphragm and holds stem from turning—each feature reduces stress in diaphragm meaning longer life.

C Diaphragm made of best grade of synthetic material is pressure molded to stem to assure a uniform leak tight construction—no parts to work loose.

D Relief valve discharges vertically as required by NBFU Pamphlet No. 58 for valves on large above-ground containers.

THESE EXCLUSIVE QUALITY FEATURES ARE BUILT INTO
RONEY CYLINDER VALVES AT NO INCREASE IN PRICE

U.L. listed—approval by
Bureau of Explosives...
Write for our complete
catalog and prices today.

L.C. RONEY INC.

511 South Redondo, Inglewood, California

Delivering Gas By Tank Truck

TO those liquefied petroleum gas distributors handling delivery of gas in bulk, the tank truck is the most important piece of equipment in their operations and likewise the one that requires the greatest care in design, construction, maintenance and operation.

The tank delivery truck is a bulk station on wheels—a gas main to the customer's installation. Scarcely any other piece of equipment in our industry's operations constitutes such an important combination of essential phases of liquefied petroleum gas distribution.

Recognizing this fact, one readily realizes the extreme necessity that the greatest care be exercised in

By H. M. HONE*
Phillips Petroleum Co., Bartlesville, Okla.

designing, constructing and operating a liquefied petroleum gas delivery truck. This truck must carry a "bulk station" down the highway through "Main Street," and up a winding lane to the customer's back door. In traffic it is subject to all the variations of highway accidents. In the customer's back yard it must discharge its contents with its own power. At all times it must prevent its "pay load" from escaping to the atmosphere unless to protect itself it releases excessive pressure built up by some outside and uncontrollable influence. Not only must it perform this latter task under normal or safe conditions, but under abnormal or hazardous situations, as well—such as traffic accidents, fires, and equipment failures.

To perform these jobs it is essential that the tank truck and equipment be properly designed and constructed. The safety devices used must be adequate to properly perform the functions for which they are intended. Because these safety devices seldom are called upon to function, the truck operator periodically should test their opera-



H. M. Hone talks in open to LP-Gas men about proper safety rules in operation and maintenance of delivery trucks beside truck used in the fire extinguishing demonstrations.

* A paper delivered at the Truck Drivers' Clinic, Oklahoma City.

tion to assure himself that the condition and operability of these devices is satisfactory.

Be Guided by Rules

Liquefied petroleum gas tank trucks are subject to NBFU Pamphlet No. 58, ICC Motor Carrier Tariff No. 7 and, of course, your Oklahoma rules. All operators and distributors of liquefied petroleum gas should be guided by these rules and the following comments are only highlights of them:

1. Truck Tank

A. The cargo tank must conform to code requirements, ASME Code U-68 or U-69 construction is recommended.

B. The tank must be so constructed as to have the proper working pressure for the product to be carried. Naturally, we all know that propane cannot be carried in a butane delivery truck with working pressure of the vessel less than 200 pounds.

C. The tank must have manufacturer's and ICC name plates attached. (ICC name plate is to be on the right front side of tank, except on twin barrel units where the name plate can be on either side.)

D. The date of last, and due date of next 5-year retest must be painted under the ICC name plate.

E. The tank should be painted with a heat reflecting surface, either white or aluminum. Also, each side of tank shall have painted in letters at least 8 inches high the owner's name, character of contents and on the rear show LPG and flammable.

F. It must be adequately welded, strapped or bolted to the truck frame to prevent forward or backward slippage.

2. Truck Tank Relief Valves

A. Must be of proper size, type and setting. Care should be given by the owner as well as fabricator in making sure relief valves are adequate in size for each particular tank per No. 58.

B. Must be thoroughly protected against mechanical injury due to collision, overturning or other emergency.

C. Must be vented vertically and unobstructed to open air; loosely capped; and drain holes provided to remove condensate which may accumulate in discharge pipe.

3. Liquid Outlet Excess Flow Valves

A. Must be properly identified.

B. Must be properly sized for full length pipe, or else must have secondary excess flow valve at point of reduction.

C. Of course they must operate satisfactorily under test.

4. Liquid Outlet Shutoff Valve

A. Must be properly identified.

B. Must be in good operating condition.

5. Filler Valve

A. Must be properly identified.

B. Back pressure check valve must operate properly.

C. Secondary back pressure check valve or excess flow valve must operate satisfactorily.

6. Recirculating Connection

Not always used on centrifugal pumps, however, if it is used, the following applies:

A. The differential regulator must be properly set and in good operating condition.

B. The recirculating valve must be properly identified.

C. Excess flow valve must operate properly under test and should be periodically checked by the truck operator.

7. Pressure Gauge

A. Must have correct range.

B. Must be in proper operating condition.

C. The opening for the pressure gauge must be provided with either an excess flow valve or a No. 54 size or smaller orifice. In addition, we recommend a needle valve be installed between the excess flow or orifice and gauge.

8. Liquid Level Gauge

A. Must be accurately and correctly calibrated.

B. Must not be of glass column type.

9. Equalizing Connection

A. Must be properly identified.

B. Excess flow valve must be in proper operating condition.

10. Piping

A. Pipe should be designed to have working pressure at least as high as the relief valve setting on the tank.

B. All piping must be securely braced, supported and protected against all road hazards and mechanical damage.

C. All fittings such as tees, elbows, etc., must be extra heavy.

D. Hydrostatic relief valves must be provided wherever liquid is or can be trapped between two valves. They should be properly vented, loosely capped and provided with drain holes to remove any condensate which might accumulate.

E. Piping must be free from leaks and should be inspected daily.

11. Valves

A. They must be designed for LP-Gas service.

B. Must be of proper working pressure.

C. Must be in proper operating condition.

12. Pump

A. Pump must be satisfactorily piped so that leaks will be held to a bare minimum.

B. The pump must be located at a safe distance from exhaust pipe.

C. Must be securely mounted and protected from all accidents and road hazards.

13. Hose and Couplings

A. Must be of proper working pressure and designed for butane-propane service.

B. Must be provided with a hydrostatic relief valve if carried wet.

C. A bleeder or blow-off valve should be provided.

D. An excess flow valve must be provided if hose is over 20 feet long and highly desirable in any event.

14. Miscellaneous

A. Must have proper drag chain in direct communication at all times with ground to drain off static charges as may be generated.

B. Must have adequate rear bumper to protect tank, piping, valves and fittings.

C. Must have safe brakes. This item cannot be watched too closely.

D. Must have proper fire extinguishers, at least one and we recommend two, inside of cab and outside.

E. Must have proper type flares.

F. Must have wheel chocks provided.

ed for rear wheels and permanently chained to vehicle.

G. Must have safe electrical wiring insulated and protected from damage. To be used whenever truck is parked, including loading and unloading.

H. Must have proper protection for all tank valves.

I. Must be equipped with thermometer well, as all trucks are filled according to liquid level.

As indicated before, this brief outline of the required parts of an LP-Gas delivery truck covers only the highlights of the various regulations and no attempt has been made to cover the entire scope of the rules. It is hoped, however, that a clearer understanding of some of these rules and an explanation of their application will further impress on you the vital necessity for originally providing your tank truck with every required safety protection and then periodically making retests of these vital devices on your own initiative.

Are You Breaking Any Laws?

Safety in the liquefied petroleum gas industry cannot be overemphasized and although many distributors in the state have excellent truck equipment, I have found that there are dozens of LP-Gas trucks rolling over our highways every day that are intentionally and unintentionally violating rules and laws governing the maintenance and operation of LP-Gas delivery trucks. Our company truck inspection program is now underway again with still more emphasis on safety than

ever before. To the best of my knowledge we have never found a perfect LP-Gas truck and a thorough inspection usually reveals some violation of No. 58 and Oklahoma LP-Gas rules.

Smokers Are Often Careless

As I have said many times before, it only takes one miscue or slip in our business to cause a serious accident. The majority of people smoke nowadays and it has been my observation that you men working around LP-Gas are far too careless with your matches and cigarettes. Just stop and think what one lighted match or cigarette might do to you.

Division III, Section 3.14 in NBFU No. 58 specifically states, "Tank truck drivers and their helpers shall be instructed not to smoke or allow smoking around the truck on the road, while making deliveries, filling the trucks, or making repairs to tank truck or tank trailer."

Stop and think—take heed of the product you are handling. Know your truck and the operating functions of each valve and fitting. Sit down and study the Oklahoma LP-Gas rules and NBFU Pamphlet No. 58. They are simply worded and easily understood.

Good truck drivers are without a doubt one of the most important factors in the LP-Gas business. The bulk of accidents usually results from carelessness on the part of a truck driver with his truck. Everyone of you men should be a salesman for safety.

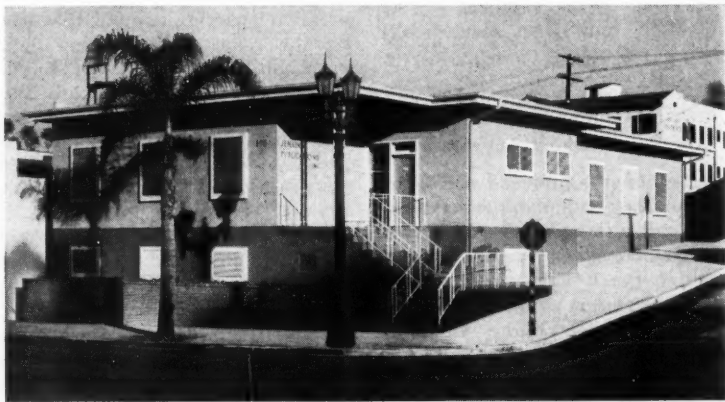
Buffalo, N.Y., Industrial Plants Install Standbys for Winter

A number of the Buffalo industries which were forced to curtail operations when last winter's gas shortage caused curtailments in industrial gas supplies, are taking steps at considerable expense to cushion the effects of any future cold-weather gas problems.

At least a half-dozen large industries have installed emergency propane or butane standby plants to help tide them over the winter periods when the gas flow may peter out. Among them are Fedders-Quigan, the Chevrolet Delavan Ave. plant, Harrison Radiator, Western Electric, Westinghouse and General Electric's Buffalo Tube Works.

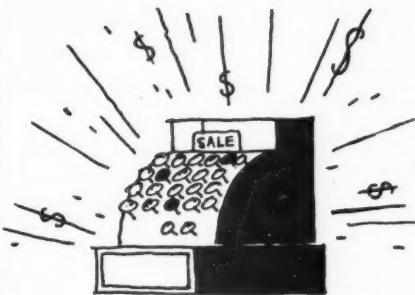
As General Manager Leon R. Ludwig, of Westinghouse, puts it, "It'll take care of a good share, but not all, of our gas requirements. Our hope is that in a gas emergency we'll get enough gas so that, using our own propane, too, we'll be able to keep operations going and people working."

Iroquois Gas is delighted, at least at the moment, to see these standby facilities installed, feeling that it will be easier if they have to call and tell an industry to get its propane working than to call and pass along some bad news that might mean plant curtailments, or shutdowns. The gas company has conferred with the companies which have put in propane plants and has given them engineering advice.

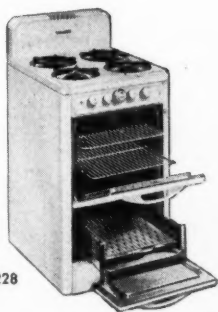


This modern building has been the new home of BUTANE-PROPANE News and its affiliated publications since Oct. 15. Located at 198 So. Alvarado St., Los Angeles, the two-story structure contains 6500 sq. ft. of floor space. Gas does the "Four Big Jobs" in the building, which has a first floor model kitchen from which approximately 300 guests were served refreshments during the Dec. 17 open house celebration.

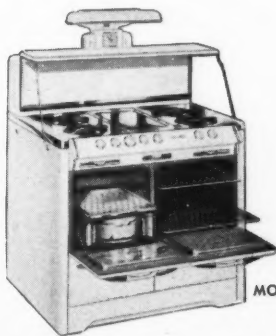
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your profit
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women prefer!



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MODEL 4348

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JANUARY—1949

103

ASSOCIATIONS

Every Distributor in Montana Is Member of State Association

THE Montana LP-Gas Association held its annual two-day meeting in Billings Nov. 19-20. Harold Gerke, president; George Steele, vice president; and D. O. Mecklenburg, secretary-treasurer, were reelected officers.

The Montana association is able to

boast that every distributor in the state is a member. This enviable 100 per cent mark has been accomplished by the hard work and concerted effort of the association's officers and long time members. Among its many positive advantages are the state-wide dissemination of all new information pertinent to the industry and the presentation of a united front when state officials or legislative bodies take an interest in any ramifications of the LP-Gas industry.

Group picture of those attending the Nov. 19-20 meeting of the Montana LP-Gas Assn. in Billings at which last year's officers were unanimously reelected.





This is the delegation Canadian provinces sent to the November Montana state association meeting in Billings. Many of their operating problems are similar to those Montana dealers encounter and they consistently attend the Montana meetings.

During the convention, members agreed to ask the state legislature to enact a law establishing NBFU Pamphlet 58 as Montana's state code. It was also decided to establish a co-operative advertising program to inform the public of the benefits of LP-Gas as compared to other fuels. Stanley Pulliam, Cut Bank, and Morris Rudio, Billings, were appointed to work out details of the advertising campaign. Mr. Pulliam, with C. E. Bruce, Minot, N. D., was elected to the association's board of directors.

The reduction of gas rates and the reduction of freight rates were thoroughly discussed. To investigate the possibility of a freight rate reduction, a committee composed of H. E. Gerke and D. O. Mecklenburg was appointed.

The convention had a true international flavor, with a strong Canadian delegation being present. British Columbia, Saskatchewan, and Alberta LP-Gas men were present, as well as representatives from the states of Wyoming, Colorado, South Dakota, Cali-

fornia, Washington, North Dakota, and Utah.

The industry's production and its reserves, its future, safety factors, and the need for progress were the subjects of an address given by Howard D. White, LPGA executive vice president. "Although the liquefied petroleum gas industry has done amazingly well, we must not remain static, but must keep progressing by utilizing all possible new methods of selling," he said in part.

Carelessness, ignorance, and improper operation of the various appliances are the major factors that lead to the few accidents that do happen in butane-propane operation, according to Mr. White. They "can in no way be traced to the product itself," he said, and cited National Fire Protection Assn. figures revealing ac-

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Since the birth of the L-P gas industry, Reliance Regulators have been preferred for their originality of design, by which positive lock-up and absolute control of

steady outlet pressure are assured under variable loads and inlet pressures.

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H. E. GERKE



D. O.
MECKLENBURG

cidents connected with liquefied petroleum gases as among the lowest in the nation.

Elwin E. Hadlick, executive vice president of the National Butane-Propane Assn., spoke of the confusion concerning the several names under which LP-Gas is sold, recently raised production figures, the advantages of keeping proper books and records, and railroad rates, among other subjects. Mentioning early in his speech that "There may have been a time in the dark, dim part when sellers of butane and propane gases wondered whether or not they were in a business that would last," the speaker closed his remarks by saying, "(now) everyone agrees that as an industry this one is going ahead in a tremendous way."

D. O. Mecklenburg, secretary-treasurer, writes of the convention that, "All distributors were optimistic of the future development and increase in business of LP-Gas in Montana."

API

Oil men from all parts of the United States and many foreign countries met in Chicago Nov. 8-11 for the 28th annual conference of the American Petroleum Institute. Attendance

broke all records, with 5127 registering for the meeting.

Addressing the first general session, William R. Boyd Jr., API president, said that the Institute was one of the petroleum industry's greatest assets not only because of its contributions to the industry's technological growth, but also because of the part it has taken in oil conservation and the increasing of oil supplies. Mr. Boyd stated that through education and research programs carried out during its 30 years of existence, the Institute has done much to raise the industry's stature in the eyes of both the general public and the government.

During the conference more than 160 separate meetings and events took place.

LPGA

One of the principal items on the agenda of the meeting of the board of directors of the Liquefied Petroleum Gas Assn., held at the Palmer House, Chicago, on Nov. 29-30, was the consideration of the association's budget for the year 1949. The board approved a budget totalling \$130,000. Included in this budget was a new project to be undertaken by the association, that of the employment of a director of publicity and advertising and the setting up of a more definitive program.

Attendant at the meeting were 40 board members and guests. M. L. Bailey, Gem Automatic Gas Co., Salisbury, N. C., was elected director for the state of North Carolina, succeeding M. D. Urquhart who died in September of last year.

Under the heading of officers reports, Executive Vice President Howard D. White reported on the successful meetings held by Donald S. McNary, West Coast secretary, dur-



WALTER MILLER



SI DARLING

ing the preceding two months at which plans were considered and formulated to combat the fuel shortage which is expected to arise this winter season by reason of production curtailment through the refinery strike last fall.

Technical Vice President F. R. Fetherston reported on the extensive activities of the technical division of the association, all technical committees having met since the last board meeting and made much progress on industry technical problems. The T & S committee had substantially completed its work on the trailer code and it was expected that this would be rewritten in time for the next board meeting.

Chairman Walter H. Miller, of the T & S committee, made this report and said further that a special subcommittee had been formulated for the consideration of revisions to Pamphlet No. 58. His committee has completed its study of the "House Piping and Appliance Code" and the association's staff was authorized to proceed toward getting this code recognized and adopted by other agencies. He stated that the next meeting of the T & S committee would be held on Jan. 25-29 at Chicago.

K. W. Rugh, chairman of the legislative committee, outlining his

committee's activities since the last board meeting, informed the board that 44 state legislatures would meet in 1949 and it was expected that much legislation would be faced by the industry in view of the fact that in the last heavy legislative year, 1947, over 100 bills affecting the LP-Gas industry were introduced. He emphasized the need for full cooperation of all members of the industry in the legislative work of LPGA.

The activities of the Publicity and Advertising Committee were reported by Si G. Darling, its chairman. The board endorsed the use of "Table Talk Magazine," a public relations tool, as well as a salesman's manual being prepared by the Beals Creative Printers.

The Transportation Committee reported the decision in I & S 5440 "Liquefied Petroleum Gas in Official Territory" and a meeting of the committee was later held to consider the effect of this decision and plan any further action deemed necessary. The board was informed that a petition for reconsideration was being filed.

Chairman J. Richard Verkamp, of the Convention Committee, reported on the progress of the convention plans for the 1949 Annual Convention and Trade Show which will take place at the Palmer House, Chicago, on May 9-11. He stated that over 40% of the exhibit space has already been sold and a complete sell-out is expected shortly after the first of the year. A program of outstanding speakers and entertainment was being planned.

Will Combat Electric Propaganda

One of the more important aspects of the meeting was the report of the Executive Committee with regard to the development of a program to combat attacks of the electrical industry. The seriousness of these at-

tacks and the necessity for unified industry action were emphasized. The committee recommended, and the board concurred, in the recommendation that a pamphlet answering these competitive attacks should be developed by the association immediately. A special committee was formed to further study this problem to formulate a definite plan and to enlist the support of allied associations such as AGA, GAMA and API.

During the meeting two honorary members and eight new active members were elected to membership, bringing the total membership to 639.

The next meeting of the board of directors has been scheduled for Atlanta, Ga., during the last week in February or first week in March, depending upon when hotel accommodations can be secured.

Strong Trade Association Urged Upon Utah Dealers

The El Escalante hotel in Cedar City, Utah, was the scene of the first annual meeting of the Utah state Liquefied Petroleum Gas Association on Dec. 11. The group was organized nearly six months previously but this was the first opportunity to get together.

Under the leadership of President Fred La Frenz, owner of the La Frenz Liquid Gas Co. in Cedar City, the Utah group is promoting a program of safety and better state legislation. This safety aspect was developed at length by President La Frenz who stressed the need for complying with the spirit as well as the letter of Pamphlet No. 58.

Marshall Haines, vice president of the association and president of Inland Gas Co., Salt Lake City, discussed the proposed model LP-Gas law which would incorporate NBFU



FRED LA FRENTZ



DON McNARY

Pamphlet No. 58 for Utah. He pointed out that Utah had no state authority or control over the LP-Gas industry and that it was therefore better for the state association to push for the adoption of a workable law incorporating recognized standards rather than wait for less workable legislation to be imposed.

Mr. Haines also outlined proposed changes in the motor vehicle fuel tax law.

Don McNary, West Coast secretary of the Liquefied Petroleum Gas Association, spoke on the need for a strong trade association in the industry. Outlining a 10-point program under which the dealers might develop their phase of the industry, he asserted that cooperation at all levels was the keystone of any such program.

The individual member's desire for strength and unity will determine the degree of effectiveness of any trade association, he said.

Other speakers were Jack Todd, district manager for Standard Oil Co. of California, who spoke of current business trends, reminding dealers they should not overlook terms of sale and credit risk while selling customers; and John Carle, American Pipe and Steel Co., Los Angeles, who discussed availability of raw materials.

Arkansas Dealers Plan Service Schools

By F. H. SHIRAS



A. W. PORTER



T. G. TACKETT

SERVICE, safety and freight rates were among the main considerations of Arkansas butane gas dealers at a special meeting at Little Rock Nov. 18-19.

The dealers decided to start plans moving to set up several service schools in the state during 1949 which would be easily available to dealers and employes in every town in the state. M. L. Blair, chief boiler inspector, State Department of Labor, promised his full cooperation, and T. G. Tackett, of the National Butane Co., of Memphis, said his company would help make arrangements.

Mr. Tackett said service schools will be held in Nashville and Memphis in April, sponsored by the L-P Gas Institute of Tulsa with the cooperation of various manufacturers. He said three trade schools were held in Mississippi last fall and dozens of dealers had reported that they were most profitable.

The Tulsa Institute furnishes all books and personnel for the five-day course and manufacturers of gas installation equipment also would be invited to send experts to instruct

the dealers in use of their products, Mr. Tackett stated. Cost to a dealer for the week's course would be \$25.

The schools would aid dealers in bettering the safety record in the state, which already is a good one. Mr. Blair reported that there had been no accidents requiring investigation by his department since last June, and that 14 states have copied Arkansas' regulations for handling gas.

The dealers heard a discussion of safety and how it affects their insurance by Lewis Light, president of the Light Adjustment Co., of Little Rock. Speaking "off the record" from the standpoint of the insurance business, he said that insurance coverage for gas industry is inadequate and that it will have to build a safety record so good that it will be accepted as a selective type of risk. Part of the present trouble is due, he said, to sensational news coverage of accidents in which gas is involved. He urged careful training of employes in handling gas and installing appliances.

Mr. Blair urged the dealers to educate their customers in safe practices in using gas, saying "Ninety per cent of the accidents investigated by my department in 1947-48 were caused not by the ignorance of employes, but by the ignorance of John Q. Public."

J. C. Murray, head of the traffic bureau of the Little Rock Chamber of Commerce, gave the dealers results of a survey he had conducted at their request on freight rates on gas,



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It's low priced

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An entirely new model, the C-2-B is the result of planned progress—a plan intended to bring you a complete line of better housings. This new unit is made of heavy gauge aluminum—rust-proof and weather-proof. The C-2-B answers fully your need for a low-priced unit for the small and medium size regulator outfits. The C-2-B is low priced. Larger output and our investment is high production tools makes an exceptionally low price possible to you. Write for detailed information.



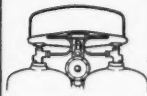
THE NEW C-2-B WALL-MOUNTED HOUSING
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BUILT LIKE A CAR BODY

The C-2-B is made with high production tools in large presses just like automobile bodies. One piece construction—no seams—no welds—no joints.



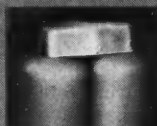
EASY TO SERVICE

Our popular clip hinge, fool-proof and weather-proof, is included on the C-2-B. Service men can couple and uncouple tanks rapidly and securely.



EASY TO INSTALL

The C-2-B is a wall mounted housing. Bracket is attached to housing at the factory. All the installer need do is locate the bracket and drive four screws.



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after which dealers decided on a course of action designed to bring the rates in line with those in neighboring states.

Most Arkansas dealers pay freight on the basis of 6.6 pounds per gallon while rates in surrounding states are at 4.7 pounds per gallon. Preston Grace, dealer from Batesville, and head of Arkansas association's freight rate committee, said the difference in rates adds as much as three-fourths of a cent per gallon to the cost of gas in north Arkansas. Only dealers along the boundaries of the state, who can use a shipping point in a neighboring state, and those in five other towns where water transport competition lowers rates, are not affected by the inequitable rates. Freight on intra-state shipments, however, is paid on the 4.7-pound basis.

Mr. Murray told the dealers to put their case before executives of Southwestern carriers after gathering data on gasoline rates to various shipping points in the state. If they do not get relief in that manner, a formal complaint should be filed with the Interstate Commerce Commission, he said. The association's secretary, A. W. "Johnnie" Porter, was asked by Mr. Grace's committee to make the survey on rates for moving gas by rail and by transport truck as well.

Proper Weight Determined

The ICC has decided in two cases that the proper weight for gas is 4.7 pounds per gallon, Mr. Murray said, but no case has been brought involving rates in the Southwest. The ICC fixed interstate rates on gasoline and fuel oil in 1931, setting the weight of gasoline per gallon at 6.6 pounds, he said. But in intra-state commerce the weight was set at 4.7 for LP-Gas. The ICC later held in a case brought by Skelly Oil Co. that 4.7 is a rea-

sonable weight for gas, but that on account of lower rates the railroads can charge 140% of the gasoline rates on gas. In another case they allowed 110% of gasoline rates to be used in connection with 4.7 on gas, he said.

The dealers also discussed the possibility of having a standard accounting service, and pledged their full cooperation with the state in banning sale of gas for possible use in highway travel without permit.

The meeting was opened with a steak dinner at the Lafayette hotel.

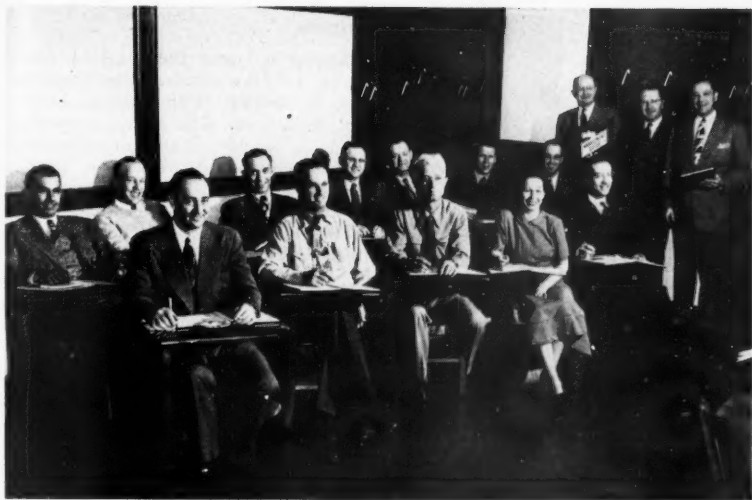
Kansas LP-Gas Assn. Holds Accounting School For Dealers

The Kansas LP-Gas Association sponsored a two-day "Business Procedure and LP-Gas Accounting School" in cooperation with the Ross-Martin Co., of Tulsa, Okla., on Dec. 6-7.

Dealer Problems Covered

Marshall Massey, management engineer of the Ross-Martin Co., conducted the classes which covered management and accounting procedure as applied to the LP-Gas industry. Using as a guide his own textbook, "Management Guide for LP-Gas Marketers," Mr. Massey outlined in detail the various records and forms pertinent to adequate business procedure for LP-Gas dealers. Specific examples showing various operational methods were explained to the class by applying dealer problems in the cases studied.

Believing that proper accounting methods are an all-important matter to the success of LP-Gas marketers, the Kansas association decided to make available to their dealers a practical course covering this phase of the business. While the attend-



This is a group of dealers who attended the Dec. 6-7 business procedure and LP-Gas accounting school in Wichita, sponsored by the Kansas LP-Gas Assn.

ance at the initial school was not large, it is believed that those in attendance had an opportunity to better equip themselves with business management and accounting procedures so vital to their business.

Existing Practices Compared

It also provided an opportunity to compare existing practices among the several companies represented, through open discussion, which was a part of the dealer course. Not unlike the service school, made available to Kansas marketers early this year, the Kansas association-sponsored accounting school was another activity in which Kansas has taken the initiative.

The two-day session was held in a classroom of the Kaufman building in Wichita.

Colorado Will Hold Service School in February

Installation and servicing of LP-Gas equipment at high altitudes will be taught in a three-day course, Feb. 7-9. The course is titled Rocky Mountain Empire LP-Gas Service School, and will be presented under the sponsorship of the national LPGA and the Colorado LPGA at the Central Christian Church in Denver.

Registration fee for students at the school, which will be under the direction of F. N. Mabee, is \$10 and is open to all members of the LP-Gas industry. Accommodations have been arranged with local hotels.

Students will be drawn from New Mexico, the panhandles of Texas and Oklahoma, Kansas, Colorado, Utah, southeastern Idaho, Wyoming, Mon-



F. N. MABEE



W. C. HAGLER

tana, western South Dakota, and western Nebraska.

Mr. Mabee's committee for the school is composed of W. M. Baum, Red Dot LP-Gas Co., Denver; W. C. Hagler, Phillips Petroleum Co., Amarillo; Don Fairchilds, The Weatherhead Co., Cleveland; R. H. Mahnke, Kansas LPGA, Wichita; James L. Thompson, Denver Propane Co., Denver; and C. G. Weakland, Jefferson Gas & Electric Co., Lakewood, Colo.

Anyone wishing additional information should write to John Knox Smith, field engineer for the LPGA, 11 S. LaSalle St., Chicago.

CALENDAR

All associations are invited to send in dates of their special and annual meetings for this calendar.

March 17-18 — National Butane-Propane Assn. Directors' Meeting. Columbus Hotel, Miami, Fla.

April 11-12—Tennessee Liquefied Petroleum Gas Assn. Andrew Jackson Hotel. Nashville.

April 20-22—Natural Gasoline Assn. of America. Texas Hotel. Fort Worth, Tex.
May 9-11—Liquefied Petroleum Gas Assn. Annual Convention and Trade Show. Palmer House. Chicago.

May 25-27—Gas Appliance Manufacturers Assn. Annual meeting. Drake Hotel. Chicago.

Sept. 19-21—National Butane-Propane Assn. Convention and Trade Show. Jefferson Hotel. St. Louis.

Illinois

Springfield was the meeting place of 50 LP-Gas dealers attending the Dec. 1 meeting of the Illinois Liquefied Petroleum Gas Assn., according to A. J. Woelfle of that organization.

Speakers heard were Lee Brand, Empire Stove Co., H. A. Goodwin, The Bastian-Blessing Co., Ken Cole, Pressed Steel Tank Co., and Dick Tillman, Beals Creative Advertising Co.

Ways to Avoid "Freeze Ups"

DURING the winter months dealers sometimes have trouble with their consumer systems "freezing up" at regulators, due to condensation of minute particles of water which occasionally are found in LP-Gas fuel or which form in equipment at consumers' premises or in cylinder valves while in transit.

In a recent issue of "Pyrofacts," publication of the Pyrofax Gas Division, Carbide & Carbon Chemicals Corp., rules are listed which will greatly help to overcome this trouble. These are given below:

1. Be sure that a rubber protecting cap is placed in the valve outlet of every cylinder, full or empty, when not in use.
2. Blow out any dirt or moisture which may have collected in the valve outlet by opening and closing the valve at least three times before connecting the cylinder to the equipment.
3. Leave the valve protecting cap on top of the cylinder when connect-

ing to the equipment so that it will be readily available for reinsertion in the valve outlet when the cylinder is disconnected.

4. Carry an extra supply of caps in your pocket as well as on the truck.

5. Never handle the cylinder lead tail piece with wet hands or wet gloves.

6. Connect a blanking off cap to the unused lead on one-cylinder installations or to both leads if the equipment is unused and no cylinders are connected.

7. Never install the regulating equipment on a new job until it is ready for the gas supply to be connected.

8. Keep regulators, leads, manifolds, automatics and other parts of the equipment in a protected dry compartment or box on the truck.

9. Tag the cylinder **immediately** if it is found empty and exposed to the weather with the valve open or if it has been connected to an installation at which a "freeze-up" has been experienced.

10. Make sure that "dry" regulating equipment is installed where a "freeze-up" has been suspected and the cylinder has had to be changed.

11. Never put alcohol or other anti-freeze solutions in cylinder valves or equipment. Alcohol and other such compounds are by their very nature "hygroscopic" which means that they absorb and retain moisture from the air. All you are doing when you pour "alcohol" into a cylinder valve is to add water to the system. We went through this experience years ago and discarded the use of anti-freeze solutions in favor of our present method of removing all moisture from the gas at the source or at the filling plant.

Howard Butane Service Covers Five Oklahoma Counties

J. D. Howard, Howard Butane Co., Elk City, Okla., announces that J. H. Platts has become a partner in the business.

Mr. Platts for 18 years was a petroleum engineer in the economics department of Phillips Petroleum Co., Bartlesville, Okla.

Howard Butane Co. recently expanded its business and now operates six trucks, specializing in propane gas systems, although it still handles butane for its customers which have such equipment.

The firm now covers a 5-counties area within a 60-miles radius of Elk City. It also sells through local representatives in each small town of this territory propane gas in 100-pound ICC cylinders filled at the bottling plant at Elk City.

Sells No Small Tanks

Mr. Howard sells his cylinder gas for use in ranges, water heaters and refrigerators and recommends that customers who want additional service should put in tanks of 500-gallons capacity, or larger. He says that he does not sell any tanks of less than 500-gallons capacity. He also sells propane in tanks for use in farm tractors, for drilling wells in the oil fields, and for supplying fuel to cotton gins. He also handles LP-Gas appliances.

Mr. Howard started in the LP-Gas business in 1939 at Clinton, Oklahoma, sold out there in 1942 and entered military service. Shortly after his return from the service he purchased the Davis Butane Co. at Elk City in 1946 and since has operated it as the Howard Butane Co.

Competition Outbid

LP-Gas Helps Give Tulsa Ample Water Supply

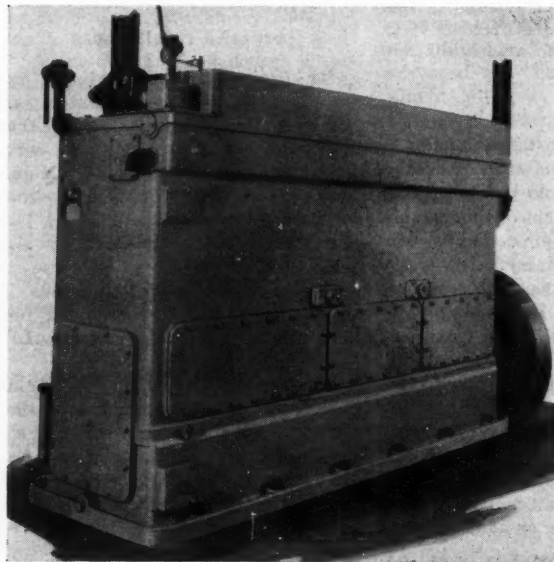
By O. D. HALL

GAS, because of its adaptability to economical operation and uniform pressure control, was chosen by the city of Tulsa, Okla., in preference to other fuels, as the source of power in a new emergency water supply installation. LP-Gas and natural gas will team up to perform the herculean task of increasing the city's water supply by 10 million gallons per day without boosting the pressure in the old 54-mile flow line extending from Spavinaw Lake, east of the city, to the supply reservoirs at Mohawk park.

Six big gas engines, two utilizing

LP-Gas and four fueled by natural gas, are being installed at strategic locations along the 54-mile water flow line. These engines are manufactured by the Bruce-Macbeth Engine Co. of Cleveland. They range in capacity from 140 to 210 hp. and are being supplied to the city water department by the Max Landry Co., of Tulsa.

This distributor also supplies six 600-rpm water pumps, manufactured by Economy Pumps, Inc., of Hamil-



This is one of six Bruce-Macbeth gas engines being installed on the Tulsa, Okla., water flow line. It operates interchangeably on natural and LP-Gas.

ton, O. Each of these pumps is hooked to one of the gas engines and forms a single water boosting unit, which will increase the water supply of Tulsa without putting an undue strain on the old flow line.

The engines are water cooled, 4-cycle, medium speed units of compact design. They can be operated on LP-Gas, natural gas or gasoline. They are rated at 35 hp per cylinder with consumption of 10,000 Btu per brake hp per hour.

Will Have Gravity Flow

One of the LP-Gas engine and pump units will be installed at the Spavinaw Lake dam and will be utilized to pump water to an elevation where it will run by gravity flow into the city flow line. This is a 175-hp engine and will replace a smaller capacity diesel engine at the same location. The other LP-Gas engine and pumping unit has 210 hp and will be installed about two and one-half miles down the flow line from the lake.

The four utilizing natural gas will work with the LP-Gas units to establish the proper head of water to increase the gravity flow in the line without bringing the pressure above that originally intended for the line. In fact the city water superintendent, W. L. Murphy, said that pressure in the line actually will be decreased, while the daily flow will be increased the required amount.

When this was written the contractor had started installation of engines in the line and had ordered a 6000-gal. LP-Gas storage tank from McNamar Boiler and Tank Co., of Tulsa, for supplying the fuel to one of the engines. The city already owns another 6000-gal. LP-Gas tank which will be utilized in connection with the other LP-Gas engine.

The gas engines were ordered by

the city because of their economy of operation and because of the automatic control they will give over the water pressure in the big 60 to 90-in., steel reinforced concrete flow line. If one engine should go out temporarily, the other units in the line will take over and carry the entire load until the crippled engine and pumping unit is repaired. The gas engines also automatically carry the proper pressure at all times without a waste of power or manual adjustments, according to the city water department superintendent.

It was not known who would supply the LP-Gas engines, because the contract had not yet been let. However, Tulsa is one of the principal sources of liquefied petroleum gas manufacture and distribution in the Southwest, so that the city authorities will not be required to go outside of that city for sufficient supply.

The natural gas will be fed to each of the four booster units by 55,000 feet of pipeline to be constructed by the city. It was decided that the gas engines probably will have to carry the emergency water load for two years, or until funds from a 17-million dollar bond issue previously voted can be utilized in increasing the capacity of the 54-mile flow line. After that they will be kept in place and maintained by the city as a standby plant.

The present emergency is not caused primarily by a shortage of water in Spavinaw lake, 54 miles northeast of Tulsa, the source of supply, but by increased water demands due to heavy population growth of the city. Water use restrictions have been put in force pending installation of the emergency system.

Since this article was prepared, the engines have been installed and total output on line has been posted where water rationing could be discontinued.—Ed.

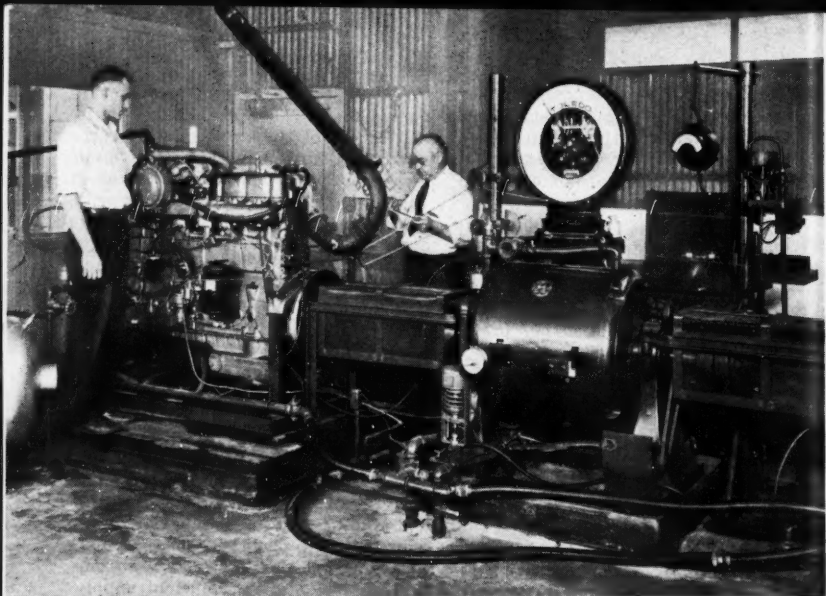
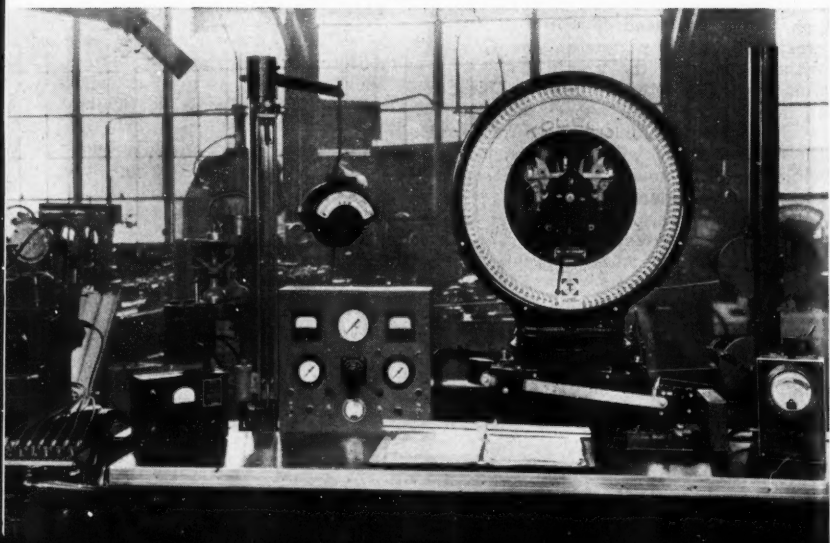


Fig. 1. West end of Ensign engine test laboratory, showing new General Electric dynamometer connected to a popular make of heavy duty truck engine. Harold Ensign, left, and Fred Laub are testing new Ensign butane-propane carburetion equipment. Fig. 2. Dynamometer instrument panel showing some of the many controls used in testing both industrial and automotive engines on any desired fuel.



New Dynamometer Can Test Engines of 500 Horsepower

WITH the application of butane-propane to large engines for both transportation and industrial uses, the Ensign Carburetor Co., Los Angeles, has developed a new model "S" butane regulating unit as well as a line of larger carburetors for butane-propane and natural gas engines in excess of 450 horsepower. New and larger experimenting and testing equipment has been installed to fill this present need as well as anticipated requirements.

This installation follows a completion of an extensive program of factory modernization and new product development at Ensign's finely equipped laboratory.

Figure No. 1 shows installation of a new General Electric dynamometer on which is being tested a leading make of heavy duty truck engine. This dynamometer will handle easily engines of 500 horsepower. It serves to check with extreme accuracy engine horsepower, speed and many other important characteristics.

The dynamometer is known as the magnetic loading type. The unit is water cooled and eliminates the necessity for heat dissipating grids, common to older types of DC electric brakes. Full automatic water temperature controls and valves are installed as illustrated. This method of heat dissipation assures more constant loading of engines under test.

Additional new equipment in the Ensign laboratory is an electronically controlled fuel weighing mechanism. Accurate measurement of fuel consumption during any portion of a test is possible. (Fig. 2.)

Complete studies of exhaust gas analyses and temperatures from spot samples to continuous operation, on individual cylinders or on the total engine, are made possible by a unique arrangement of testing apparatus.

With new laboratory facilities together with other highly specialized engine testing equipment for either wet or dry fuels, Ensign engineers have the most modern tools available.

Had to Prove Fuel in Early-Day Selling

STARTING as salesman and manufacturers' representative in the Mid-continent territory in the early '30's, Tom Gorman has made liquefied

petroleum gas and its use as a motor fuel his specialty. In the early days acceptance of LP-Gas as a motor fuel was not as universal as we know it today. Claims of performance needed support by actual field tests before operators were willing to try this "new" fuel.

In pioneering his particular area Tom Gorman greatly broadened his knowledge of LP-Gas; his information

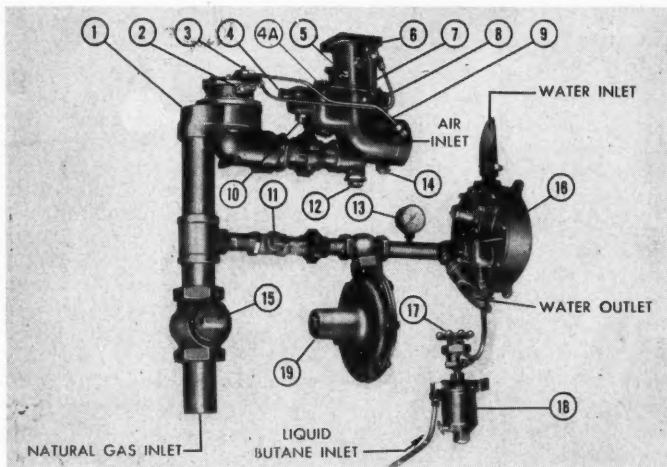


Fig. 1. Method of installing butane-propane filter and vaporizer on industrial engine already equipped to burn natural gas.

- | | |
|--|---|
| 1. Ensign 2" Model "B" low pressure metering fuel regulator. | 9. Balance line. |
| 2. Primer for natural gas. | 10. Gasoline float lock. |
| 3. Idle adjustment screw. | 11. Butane-propane shutoff valve (vapor). |
| 4. Gasoline inlet. | 12. Load adjustment screw. |
| 4-A. Gasoline load adjustment screw. | 13. Vaporizer outlet pressure gauge. |
| 5. Gasoline idle adjustment screw. | 14. Carburetor choke. |
| 6. Ensign combination carburetor. | 15. Natural gas shutoff valve. |
| 7. Carburetor throttle lever. | 16. Butane-propane vaporizer. |
| 8. Idle line. | 17. Liquid butane shutoff valve. |
| | 18. Liquid butane-propane filter. |
| | 19. Intermediate or line regulator. |

ANOTHER LPG LOAD BUILDER!

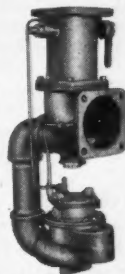


Use Butane-Propane fuel for low cost pumping

Water pumping, oil well drilling, generating electric power and heavy duty trucking all are good LPG load builders. Butane-Propane (LPG) is the finest motor fuel for these services if properly carburetted for good combustion.

For dependable engine performance day in and day out—for low cost operation and maintenance—Ensign carburetion is recognized in the field as the best equipment available. Ensign users benefit everyday from the experience we have gained in over 36 years of carburetor building.

All leading makes of gas engines are easily equipped with Ensign Butane-Propane vaporizers, regulators and carburetors. Write us for complete information.



ENSIGN CARBURETOR COMPANY

7010 S. ALAMEDA STREET • P. O. BOX 229 • HUNTINGTON PARK, CALIF.

Branch Factory: 2330 West 58th St., Chicago 36, Illinois

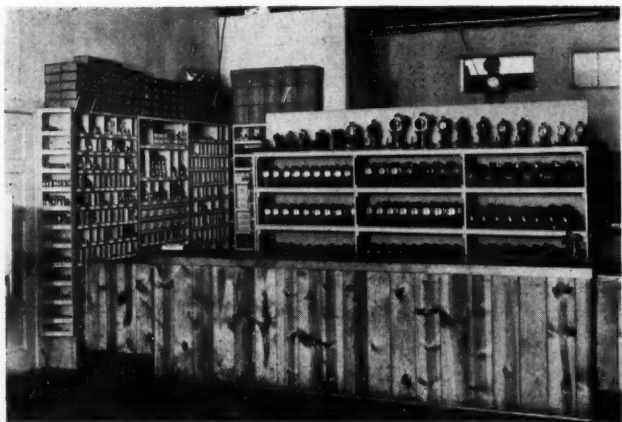


Fig. 2. Corner of Tom Gorman's LP-Gas carburetor stock room.

and findings being made available to others. This type of selling and service made many friends and valuable contacts, which Tom enjoys today, and which have in large measure accounted for his rapid growth and reputation in the industry.

In the Tom Gorman headquarters at 801 So. Detroit Ave., Tulsa, a fine store and service shop are maintained. In addition to handling a very complete line of Ensign butane-propane carburetors, vaporizers, filters, etc., for which Mr. Gorman is exclusive distributor, a large stock of Ensign natural gas equipment is also carried.

Serving the oil as well as the agricultural and transportation industries, Mr. Gorman and his staff have adapted butane and propane to many natural gas and gasoline engines. Fig. 1 illustrates the method of installing the butane-propane filter and vaporizer to an industrial engine already equipped to burn natural gas. This

type of installation is known as the Ensign "multi-fuel system" and makes possible the operation of the engine on either fuel.

This is a highly desirable feature especially for oil field drilling and servicing rigs. A wild-cat well can be "spudded-in" using butane-propane or gasoline for fuel. When the well has reached a depth where natural gas is found, the drilling engines can then be switched over to burn the newly found natural gas at practically no cost for this fuel.

Fig. 2 shows a corner of Tom Gorman's stock room which, according to visitors from many parts of the country, is one of the finest found anywhere. In addition to carburetion equipment a full line of allied products is also carried. Personnel in the organization includes several field representatives who sell and service equipment in the immediate vicinity of Tulsa as well as in eastern Oklahoma, Arkansas, and southwest Missouri.

EMPIRE

THE WORLD'S LARGEST MANUFACTURER
OF GAS FLOOR FURNACES

SAME QUALITY . . . SAME DEPENDABILITY

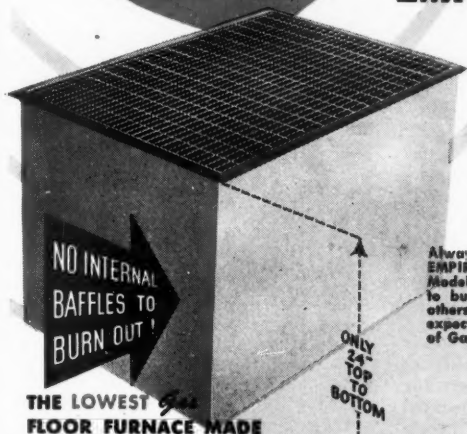
Scores Again!

WITH THE NEW
EMPIRE "LO-BOY"

Gas
FLOOR FURNACE

IN PERFORMANCE

IN ENGINEERING



THE LOWEST *Gas*
FLOOR FURNACE MADE

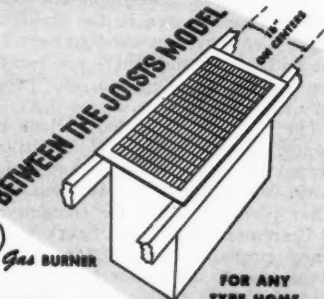
Measuring only 24-in. top to bottom, the new, EMPIRE "LO-BOY" is the lowest model on the market today. Hence, it's easiest to install at a minimum of effort and expense. The quality and efficiency are up to the high standards achieved by EMPIRE Engineers in all gas appliances bearing the EMPIRE name.

EQUIPPED WITH
THE FAMOUS
EMPIRE HORIZONTAL

This means heating efficiency
with marked economy—safety.



Gas BURNER



FOR ANY
TYPE HOME
OR COMMERCIAL
BUILDING

SEE YOUR NEAREST EMPIRE REPRESENTATIVE OR WRITE US FOR FULL INFORMATION

EMPIRE

STOVE CO.

BELLEVILLE,
ILLINOIS

MANUFACTURERS OF GAS HEATING COOKING APPLIANCES

New Insurance Company Files Texas Application

Application for license to write casualty insurance in Texas was filed with the State Insurance Commission by American Lloyds Nov. 16. This is the organization sponsored by the Texas Butane Dealers Assn. and which is owned and controlled entirely by butane dealers.

At a Nov. 16 meeting Lyle Blanton, Blanton Butane Gas Co., was elected attorney-in-fact of the insurance company. Other officers elected at the same meeting are William J. Lawson, TBDA, deputy attorney-in-fact, and Gus J. Moos, Austin Hydrogas Co., secretary-treasurer.

American Lloyds was expected to be able to write policies by the first of this year.

House Shortage Forces Dealer To Live at Bulk Plant Office

Perley Stoughton, manager of the bulk plant of Utilgas Corp. at Kensington, Conn., has found a method of solving the housing shortage by combining his office with his home.

Mr. and Mrs. Stoughton and their young daughter live in the structure which also serves as headquarters for the bulk plant, and where are located the files, desk, telephone, etc. necessary for the business.

The plant is of 20,000 gallons capacity, and is operated by the Utilgas Corp., of 415 Lexington Ave., New York. Virgil Stark is president. Another plant of the same company is at Claremont, N. H. Mr. Stark put in many propane systems for housing developments in Connecticut during the war.

The Kensington bulk plant has been in existence at its present location a couple of years, and it is possible Utilgas Corp. will be expanding one

of these days. Meanwhile Mr. Stoughton would like it if the housing shortage would ease so they could expand their living quarters.

He has given some thought to the possibility of forming an informal group or association of people in the bottled gas business in Connecticut.

Texas Dealers Hold Business Relations Conferences

Public relations conferences being held by dealer-members of the Texas Butane Dealers Assn. bring the number of meetings to 19 since the first held Oct. 4.

At each conference a chairman is elected from the district to conduct discussions of industry problems and solutions. He also serves as direct contact man for his particular area.

Among the cities in which meetings have occurred are Abilene, Austin, Beaumont, Ft. Worth, Houston, Longview, Lufkin, Mount Pleasant, Victoria, Dallas, and Wichita.

Course in Retail Credit Attracts Dealer Group

In order to take advantage of the Retail Credit School held recently in Austin, Texas, dealers sent members of their personnel to attend the school.

The course is offered to store owners, managers, credit managers, credit office employees, and salespeople and is conducted by the University of Texas and the State Board for Vocational Education. Topics covered in the school included opening accounts, interviewing applicants, "How to Say Yes" and "How to Say No," controlling the account, collection methods, etc.

Sterling S. Speake, retail credit specialist of the university extension division, was instructor.

L P Gas Industry ... Projected Production Output

1949



... 3,771,866,600 gallons



MITCHELL Vaporizers

... can help dealers bring an estimated short demand up to this staggering production figure. MITCHELL Vaporizers assure all-season gas service—uniform pressure gas of constant heating value in precise response to demand at all times. By offering this dependable, accurate control of gas supply, they open possibilities for vast new volume outlets.

Among the new potential applications are central gas plants, the field of air conditioning, stand-by industrial installations, utility reserve supply, and agricultural and related activity uses. In all of these, MITCHELL Vaporizers will serve efficiently, economically and safely.

Write for illustrated booklet on vaporizer operation. Yours for the asking, address
JOHN E. MITCHELL CO. DEPT. B,
3800 Commerce St., Dallas, Texas.



for dependable L.P. gas service

JOHN E. MITCHELL COMPANY

Manufacturers of fine machinery for over forty years

DALLAS, TEXAS

among
its many
important
applications:

COTTON GINS
DRILLING RIGS
PUBLIC BLDGS.
FARMS..RANCHES
TOURIST COURTS
INDUSTRIAL PLANTS
SMALL COMMUNITIES
DEHYDRATION PLANTS
SCHOOLS AND CHURCHES

Truck Tank Manufacturer Sells Fleet to One Distributor



E. J. GUSTAFSON



K. A. GASAL

One of the largest single sales of LP-Gas truck tanks in the history of the industry was made recently to E. J. Gustafson, of Sioux Falls, S. D., owner and general manager of Town & Country Gas Co. The deal was

signed up by R. A. Gasal, sales manager, LP-Gas equipment division of Butler Manufacturing Co., Kansas City, Mo., and R. R. Olson of Butler's Minneapolis office.

Mr. Gustafson's large single order of Butler LP-Gas truck tanks was placed so that he could supply a portion of the many "Marvelgas" dealers he has throughout the trade territory he services. This includes the eastern half of South Dakota, plus a portion of Minnesota, Iowa and Nebraska.

Mr. Gustafson, in addition to having a completely stocked retail outlet in Sioux Falls, is equipped to furnish his dealers with a full line of top quality appliances to be sold in conjunction with "Marvelgas."

Having a fleet of truck tanks furnished by a single manufacturer has definite advantages, Mr. Gustafson believes. First, the tanks, which are painted a sparkling white with blue trim, are nearly identical. This means



This delivery truck job is typical of the 50 ordered from Butler Manufacturing Co. by Town & Country Gas Co., Sioux Falls, S. D.

that prospective customers all over the territory are constantly aware of the distributor's trade name as the tanks travel the territory. The name "Marvelgas" is prominently displayed on the tanks and trucks. The advertising value of this type of operation is inestimable.

In choosing Butler LP-Gas truck tanks, Mr. Gustafson assured his dealers of high-quality, dependable equipment. Under the direction of research-minded men, Butler has constantly improved the truck tanks it produces and today they embody the refinements and improvements which are essential components of fine LP-Gas transportation equipment.

A factor which influenced Mr. Gustafson's decision was a recent visit

to the Butler plant at Kansas City, where he could observe the rigid inspection each tank undergoes at the completion of the production cycle.

After deciding upon Butler tanks for his fleet operation, Mr. Gustafson brought up the question of delivery. The gas load peak season was only a few weeks in the future. Cold weather was beginning to leave its mark on the trees in the Northern states. Deliveries were important. Butler production men promised they would deliver the truck tanks when they were needed and this has been accomplished.

This sale to Town & Country Gas Co. follows the purchase of several similar truck tanks more than a year ago.



The meter says empty, but not for long! These big steel tanks soon will be in use, storing butane and propane gas in industrial plants and outlying homes beyond the reach of gas lines. They are on the shipping floor at Christy Park Works of U. S. Steel's National Tube Co., McKeesport, Pa. Ruth Rowe demonstrates how the housewife will read her gas meter.

Omaha Blaugas Co. Issues Consumer Sales Folder

"The Tongue of Flame," that speaks of better living, is the title of a handsome consumer piece recently prepared by the Omaha Blaugas Co., Omaha, Nebr. A brief history of the company, one of the original organizations in the industry, is given.



L. R. FORSYTH

It was established 34 years ago by H. K. Forsyth, father of L. R. Forsyth, now president of the company. Omaha Blaugas is said

to be one of the two surviving companies of the original 18 established to introduce Blaugas to the United States. It has storage capacity totaling 60,000 gals. Twenty thousand cylinders serve Omaha Blaugas customers while some 16,000 systems are out under lease. In addition to the Omaha plant, 200 dealers handle Blaugas in the Middle West.

Covers Many Fuel Applications

A good portion of the booklet is devoted to the use of LP-Gas in the home for cooking, refrigeration, and water heating. Farm applications of the fuel are very well presented with each use explained and illustrated. Milk house sterilizing, orchard heating, chicken brooding, stock tank heating, and workshop uses are among the farm applications featured.

In November, 1947, L. R. Forsyth organized the Cygas Co. This new company will soon operate plants in Sergeant Bluff and Neligh, Iowa. L. R. Forsyth is president and treasurer of the company, M. E. Forsyth, first

vice president, Ed Staroski, second vice president, and L. R. Forsyth, Jr., is secretary.

Cygas Co. is not a subsidiary of the Omaha Blaugas Co., but is owned outright by the above named officers.

Arkansas Dealer Tells Gas Story in Newspaper Ad

Leonard Warden, operating under the name of Leonard Warden Distributor, Inc., in West Memphis, Ark., used a two-page spread in a recent issue of the "Crittenden County Times" to tell his present users and prospective customers the story of LP-Gas.

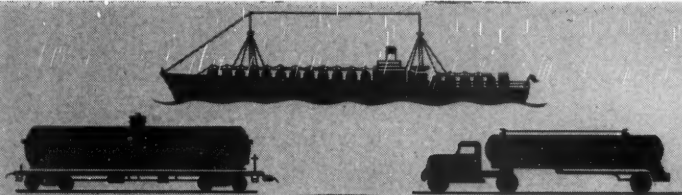
He combined photographs of deliveries at his bulk plant and illustrations of appliances he handles to advantage. The fire loss distribution chart for 1946 from the National Fire Protection Assn. gives visual proof of the safety record of the industry. A coupon is available for prospects who are interested in the many services which Mr. Warden offers.

The information is presented in the form of news stories with such heads as "Answer to Question of LP-Gas Supply," "The Show Must Go On," "Our System of Making Gas Deliveries," "LP-Gas as a Fuel" and many others.

Texas Dealer Buys Truck

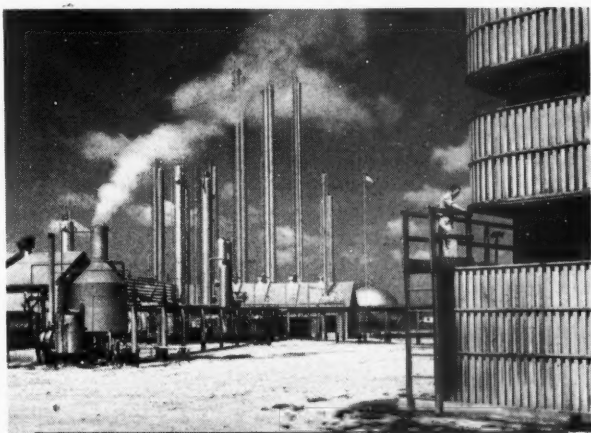
More equipment has been added to the operations of the Modern Appliance Co., Victoria, Texas.

The latest addition is a 2-ton delivery truck with twin barrel 1,206-gal. propane tanks.



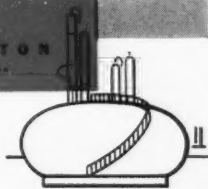
LIQUEFIED PETROLEUM GASES

WARREN'S CROSSVILLE, ILLINOIS PLANT



WARREN PETROLEUM CORPORATION
TULSA, OKLAHOMA

DETROIT MOBILE HOUSTON
NEWARK, N. J. MT. VERNON, ILL.



PRODUCTS



Domestic Range

Brown Stove Works, Inc., Cleveland, Tenn.

Model 300 Series.

Description: Available in five different models. A medium price range with divided cooking top, aluminum alloy burner heads, stainless steel burner grates and individual porcelain enamel burner wells. The standard model is fully insulated, has automatic top lighting, 16"x20" oven, and two giant and two regular burners. The interior is stippled porcelain and broiler is located below the oven. Warming closet is full oven sized and it has one roller bearing utility drawer.

The range is also available with "Waist-Hi" broiler and separate oven and broiler burners, giving it two-

oven capacity. Picture window oven door and an apartment range are available variations. Manufactured for the first time in 1948, the 300 Series gas ranges are completely new and incorporate all of the latest American Gas Association specifications and are fully approved for LP-Gases.

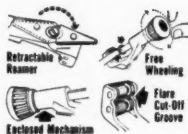
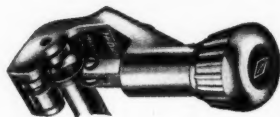
Tube Cutter

Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago.

Model: No. 274-F.

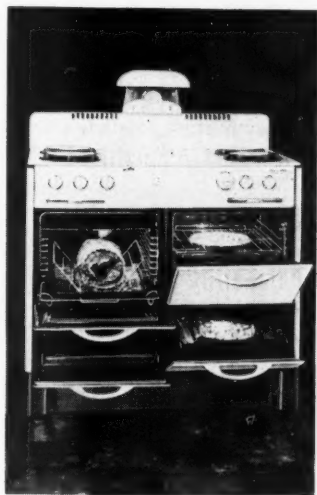
Application: Designed for use with copper, brass, aluminum, Bundy steel, block tin and lead tubing, hard or soft temper, and will cut all sizes from 1/4 in. to 1 in. outside diameter.

Description: Ball thrust bearings are built into the tool to provide "free wheeling" operation and to make possible speedy size adjustment. Tubing being cut rolls on rollers, adding to ease of operation. A patented flare



cutoff groove in the rollers makes it possible to remove a cracked flare without waste of tubing.

The retractable locking reamer for reaming tubing after it is cut is another new feature. The reamer folds away when not in use. Overall length of tool is 4½ in. and weighs 6 oz. Feed mechanism of tool is enclosed so that threads are protected against dirt and damage.



Domestic Range

Western Stove Co., Culver City, Calif.

Model: Californian 40.

Description: The new Californian "40," family size model of Western Holly ranges, offers the buyer an economy priced range with many of the features found in higher priced models.

This model is an addition to the Californian line which has heretofore

offered the apartment size "20" and intermediate size "30."

The Californian line is designed to offer the economy-minded buyer a modern and complete gas range. None of the Californian line of ranges are "stripped" models. Instead, they offer both a temperature-controlled baking oven and a waist-high "Broyl-Oven," plus other features usually available in higher priced models.

All three models above named have "Tempa-plates," one-piece oven and broiler construction, porcelain enamel, and "Modern-Way," glide-out broiler.

According to the manufacturer, the Californians have been designed for the mass income class or those starting in housekeeping and builders and property owners who are providing housing for today's needs.

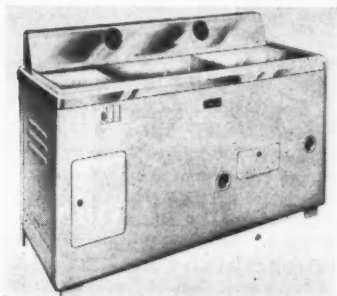
Dish Washer

Kewanee Industrial Washer Corp., Kewanee, Ill.

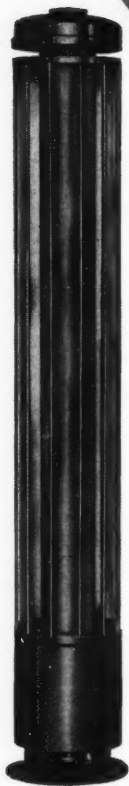
Model: Kewanee.

Application: Commercial dish washing.

Description: The Kewanee handles dishes, silver, glasses, bowls, and



NOW! AMERICA'S AMAZING NEW HEATER...



PANELRAY "F"

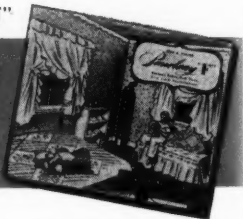
RECORD breaking success of Day & Night's wall model Panelray makes possible infra-red heating in new low-cost competitive heater.

A great new addition to Day & Night's line of space and water heaters has been realized with the introduction of Panelray "F." Low in cost, high in efficiency — fast in operation — the Panelray "F" is an infra-red ray, body height heater in 9,200 and 16,500 B.T.U. sizes, and stands in a 9" circle of floor space — may be used vented or unvented. Here is a "sure seller" and profit maker in good times or bad.

"TO SELL SUCCESSFULLY — SELL DAY & NIGHT"

FULL COLOR BROCHURES

Write for free booklet containing full color pictures of Panelray "F" installations.



DAY & NIGHT

MONROVIA, CALIFORNIA

MANUFACTURING COMPANY

ONE OF THE DRESSER INDUSTRIES

utensils, washing up to 3000 pieces per hour. It has a centrifugal pump with no packing and only one moving part and a $\frac{1}{4}$ hp electric motor with hinge type adjustable mounting. Washing solution is circulated at 400 gals. per minute.

The overall size of the unit is 56 $\frac{1}{2}$ in. long, 23 in. wide, and 31 in. high. The washing tubs are 17 in. deep, 17 in. wide, and 22 in. long with 11 in. standpipe protected by steel strainer with guard. Rinse tub, 20 in. long, 17 in. wide, 14 in. deep with 11 in. standpipe.

The seam-welded cabinet is of 18 gauge steel.

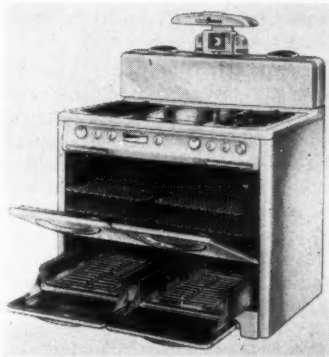
A 20,000-Btu burner is centered below each tub, and is easily regulated by brass plug valve in front panel. The unit heats its own water—no booster is required.

Domestic Range

James Graham Manufacturing Co., Newark, Calif.

Model: Wedgewood "Gold Star" No. 8648.

Description: Available with six top burners or four burners and chrome



"Griddle-in-the-Middle." Also two full-size baking ovens are capable of simultaneous operation.

There are also two "flavor-seal" broilers. Other features are control-action top burners, unit cooking top, recessed control panel, and folding cover top. The range occupies a floor space 40 in. x 36 in. x 26 $\frac{3}{4}$ in.; weight is 430 lbs.



Gas-Fired Incinerator

Electrocap Mold Co., 115 E. Carson St., Pittsburgh.

Model: "Gar-Disposal."

Application: Domestic garbage and rubbish disposal unit.

Description: The unit operates on the down-draft principle which develops an efficient two-way drying action. By means of this method of disposal, all air passes down through the organic substance, withdrawing the moisture. Warm air from the pilot also circulates through the refuse, aid-

ing in this dehydrating process. As the contents become dry and combustible, they are ignited by the pilot and are fully consumed.

The unit is finished in baked enamel in a choice of red, white, or green. Gas pilot and burners are furnished for either LP-Gas, natural or manufactured gases.

Specifications: Weight, 140 lbs.; height, 32 $\frac{1}{4}$ in.; depth, 20 in.; width 20 in.

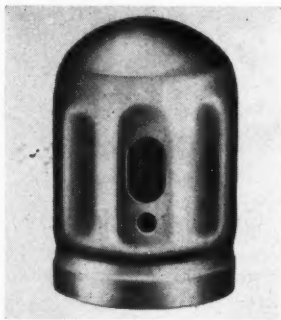
Cylinder Cap

Compressed Gas Cylinders, Inc.,
P. O. Box 222, Vernon, Calif.

Model: CGC Octagon Cap.

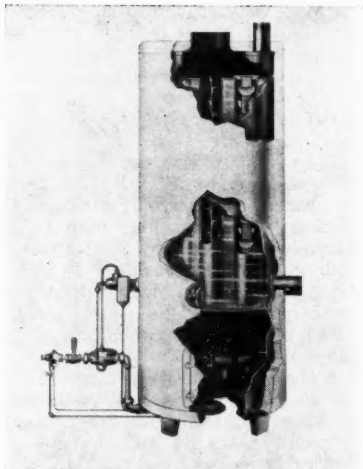
Application: Designed for more efficient handling of cylinders.

Description: The octagon shape of this new cylinder cap is said to make gripping and handling while rolling



the cylinder much easier. Constructed of cold drawn steel, the smooth rounded dome is drawn to be 50% thicker than the side walls of the cap, assuring extra safe valve protection.

The standard size cap, 6 in. high by 3 $\frac{1}{2}$ in. in diameter, is threaded with 11 threads to the inch. The weight is only 2.4 lbs.



Commercial Water Heater

Pittsburgh Water Heater Corp.,
Pittsburgh, Pa.

Model: Hi-Flo-40.

Application: A high efficiency storage type water heater especially engineered to fill needs of modern restaurants, tap rooms, and soda fountains and designed to meet growing demands for more strict sanitation where food is served.

Description: Because of its fast draw and recovery rate, this water heater is suitable for use with mechanical dish washers which operate with a 170° to 180° rinse. It will operate either directly on the cold water line or as a booster unit in existing water heating systems.

According to the manufacturer, the importance of two-temperature water heating units is growing. Water at 180° for sterilizing and 140° for dish washing is available simultaneously



the
SPOTLIGHT'S
on

ROPER

"America's Finest Gas Range"



**Personalized Selection
for Your Customers**

Here are 36-inch, 40-inch
and Extra-Capacity
"Town and Country" Models

They're here! Already in production! The complete line of beautiful new 1949 ROPER Gas Ranges, designed especially for use with Liquefied Petroleum gas. Within these distinctive exteriors is everything your customers want . . . and you can provide a model that exactly meets each specific requirement.

ROPER and ONLY ROPER has these

JEWELS OF COOKING PERFORMANCE

"Staggered" Cooking Top

"Simmer-Speed" Burners

"Insta-Flame" Lighters



Infra-Red "Glo" Broiler

Big "3-in-1" Oven

"Scientific" Charts

GEO. D. ROPER CORPORATION • ROCKFORD, ILLINOIS

on the Hi-Flo-40 by employing a mixer valve.

A special feature of the heater is the "Airtrol" control in the base which automatically closes and prevents air circulation when the burners are off. A large temperature dial on the front of the unit near the top makes it convenient for the operator to tell at a glance the temperature of the water in storage.

Commercial Range

Detroit—Michigan Stove Co., Detroit, Mich.

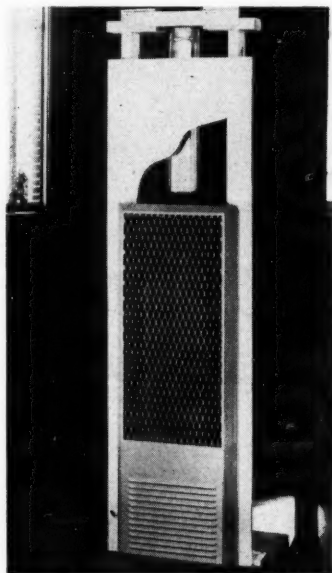
Model: Garland 45-29 Series.

Application: Heavy-duty ranges for commercial cooking.

Description: A new line of heavy-duty ranges and attachments, this group features flo-line design, a larger even-temperature oven, new loop style oven burner, and a new system of flue ventilation. Models include all-hot top, open top, and fry top, all



with or without ovens. Matching companion units include a new combination griddle and broiler and a new fat fryer.



Wall Panel Heater

Lennox Furnace Co., Marshalltown, Iowa.

Model: Heat Panel.

Description: This is a fully vented wall panel gas-fired heat circulator, designed to fit between the standard 16 in. spacing of 2 in. x 4 in. studs. Heat is delivered by convection and radiation from an air-tight steel heating element. Accidental contact with the heating element is prevented by a small mesh, metal, outlet grille. A double blanket of air insulates the

ALL UNITS SHOWN ARE AGA-APPROVED FOR OPERATION WITH LP-GAS



Type 101 Gravity Furnace—Steel. For small and medium-size homes.



Type 102 Winter Air Conditioner—Steel. "Heat-Speeder" sectional heat-exchanger design.



Type 103 Winter Air Conditioner—Steel. "Heat-Speeder" sectional heat-exchanger. For large residences, apartment houses, and commercial installations.



Type 105 Winter Air Conditioner—Steel. Type 101 plus forced-air circulating and filtering unit. Shown with Mueller Levelizer Control System.



Type 109 Winter Air Conditioner—Steel. Vertical cabinet for space-saving installation. Blower assembly mounted in exclusive Roll-a-Drawer.



Type 110 Winter Air Conditioner—Steel. Vertical design similar to Type 109 less Roll-a-Drawer. For small homes and apartments.



Type "UH" Unit Heater—Space heating unit for factories, warehouses, hangars, shops.



Type 150 Unit Heater—Suspended type. For flexible, space-saving, "overhead" installation.



Type 10 Boiler—For steam, hot water, or vapor heat, and hot-water supply in residences and small commercial or industrial locations.



Type 11 Boiler—Same as Type 10 except that controls are not enclosed in outer cabinet.



Type 500 Conversion Burner—Designed for quick, easy installation to convert coal- and oil-fired units.

Mueller Climatrol

fuel-thrifty Furnaces

YEAR 'ROUND AIR CONDITIONER



Type 901 Summer Air Conditioner—For installation with Type 105 LP-Gas-Fired Air Conditioners. By-pass damper. Sizes: 3 and 5 tons.

there's no question about the *right* answer to any heating problem

— and no question that you can build a profitable volume of new L-P Gas business


Here are four important sales advantages that will help you develop a bigger volume of profitable LP-gas business in your territory:

- 92 years of specialized experience building quality products. Years of national advertising in leading magazines have established the Mueller Climatrol name.
- Up-to-the-minute engineering gives your customer the most advanced new heating developments.
- The complete Mueller Climatrol line gives you a unit you *know* is right for any job.
- Modular design permits adequate inventory with minimum capital investment.

Cash in on these four advantages. Sell Mueller Climatrol heating for the big profit

it brings you—and for the additional sales it sets up. Write for complete, up-to-date information. . . . L. J. Mueller Furnace Company, 2004 W. Oklahoma Ave., Milwaukee 14, Wis.

Modular Design—a great new advance!

All units indicated by  are Modular Furnaces. Each is composed of combinations from a basic group of interchangeable units.

Thus, you can install any modular equipment (up to the complete year 'round air-conditioner) all at once or a *step at a time*; change from one fuel to another by switching modular units. You can expand the initial installation by adding modular units. At each stage, your customer enjoys the efficiency of a completely engineered heating system! Write for complete details on this great new step in home-planning. It's a real sales-builder!

See our Exhibit • Booth 1037, 1039, 1043
9th International Heating & Ventilating Exposition

MUELLER

Climatrol

HQ-6A



FOR GAS



FOR OIL



FOR COAL

heating element from the cabinet, keeping the cabinet safely cool.

The heater is equipped with a 100% safety pilot which stops all gas flow in case of accidental flame extinction. Control may be either manual or thermostatic.

The heater, which is AGA-approved for LP-Gases, natural, manufactured and mixed gases, has an input of 25,000 Btu per hour.

Gas Appliance Catalog

A 31-page catalog (No. 948) commemorating the 50th anniversary of the Malleable Steel Range Manufacturing Co., South Bend, Ind., has been issued. A completely new line of South Bend commercial ranges, ovens, griddles, broilers, and specialties is presented.

One section of the catalog is devoted to heavy duty gas ranges; another to heavy duty gas broilers. Griddles, counter broilers, and griddle stands are described together with gas ovens and charcoal broilers.

South Bend equipment can be furnished for use with LP-Gas, natural and manufactured gases.

Pump Bulletin

A bulletin describing the application of turbine vane type pumps to the handling of liquefied petroleum gases has been issued by the Peerless Pump Division of the Food Machinery Corp.

The bulletin, designated No. B-2200, describes both a stationary pump, Type XT, and a portable pump, Type MXT. The two pumps, depending upon capacities desired, are used for loading or unloading LP-Gas from tanks or transport to storage, from storage to tank trucks, from truck to

consumer storage, and for bottle charging service.

The stationary pump provides capacities up to 50 gpm, horsepower range up to 7½, and develops differential pressures up to 200 lbs. The portable pump is furnished with a ¾ hp explosion-proof electric motor for 60 cycle house current, a 15 ft. extension cord and carrying handle. It provides a capacity of 4 gpm and develops differential pressures up to 40 lbs.

The bulletin may be obtained by writing to the company at 301 W. Avenue 26, Los Angeles.

Gas System Booklet

"Here's what your Smithway Liquid Gas System can do for you." Bulletin LPG-822, a 12-page illustrated booklet, explains the uses of liquid gas systems for domestic, farm and commercial use and provides safety pointers that should be taken to avoid trouble.

Free copies are available by addressing A. O. Smith Corp., Houston, Texas.

Texas Dealer Urges Customers To Increase Storage Capacity

Anticipating a busy winter schedule, the W. M. Foster Butane Gas Co., of Marshall, Tex., has greatly expanded its distribution facilities to care for increased winter demand by consumers.

A new distribution point has been set up at Tatum, and new offices and display rooms were opened at Hughes Springs. Concurrent with the expansion, W. M. Foster, president, has engaged in a campaign to induce customers to increase their storage capacities to lessen possible winter shortages.

Compare LP-Gas with Fuel Oil for Heat

"DICK" Coughlin, Westland Oil Co., Minot, N. D., has been experimenting with heating two identical houses with fuel oil and propane to determine the comparative cost of the two fuels.

The two houses were 24 by 34 ft. in area, containing 4 rooms and full basement of identical size and construction. Both were heated by forced hot air. The following report by Mr. Coughlin covers the experiment:

House No. 1 was heated with a furnace of 100,000 Btu capacity and using No. 3 oil. In addition was operated a four-burner and oven propane stove, a 6-ft. Servel refrigerator and a 30-gal. Servel hot water heater with propane from 100-lb cylinders.

House No. 2 was heated by a gas furnace of 140,000 Btu capacity and also operated a propane stove identical with the stove in house No. 1, an 8-ft. Servel refrigerator and a 45-gal Servel hot water heater using propane from a 500-gal underground tank.

The oil furnace on a CO₂ test showed 77½% efficiency and the gas furnace indicated an efficiency rating of 88%.

Both families, consisting of two persons and no children, were of about the same living habits, and kept their houses at nearly the same temperature. The cost of furnaces and tanks installed were as follows:

House No. 1—Oil, \$349.69.

House No. 2—Gas \$479.68.

The 10-month period covered under this test was from Aug. 15, 1947, to June 15, 1948. The comparative costs are as follows:

House No. 1:
No. 3 burner oil, 942 gals. @ 16.1c...\$152.10
Burner service 17.19
13 cylinders propane @ \$8.16..... 106.08
(used in stove, refrigerator and
water heater)

\$275.37

House No. 2:
Propane, 1502 gals. @ 18.1c.....\$272.87
(gallons of gas include amount used
in stove, refrigerator and water
heater)

\$272.87

Difference, favoring gas\$ 2.50

Summarizing the above comparison, it appears to us that with the maximum use of propane in the home, the savings which result from bulk delivery over cylinder delivery are sufficient to offset the higher cost of propane for heating only. Without this advantage, fuel oil would be the most economical as the oil heating cost was \$169.29 and the propane heating cost was \$216.00, when only heating is considered.

Gas Has Intangible Advantages

However, gas has the advantages of cleanliness, quietness of operation, burner simplicity, longer furnace life and the convenience of only one type of fuel for all appliances. No attempt has been made to place a monetary value on these advantages.

We do not feel that propane is as well adapted as fuel oil to meet all heating requirements. We feel propane requires an easily heated house of small or moderate size and is not well suited to conversion of old furnaces.

The test will be continued for the next heating season.

Good Service Helps Good Fuel Build Commercial Load

THE difference between mediocre retail business and business volume in the high brackets has been demonstrated by the modernized service made possible through LP-Gas installations in business establishments in the suburban areas of towns and cities where the natural gas mains of public utilities do not reach.

An example of this is a typical installation of the Rulane Gas Co., of Charlotte, N. C., at the Plantation Grill. Two years ago the grill, completely equipped with LP-Gas burning ranges, water heaters, and a central heating unit all installed by Rulane, opened with about twice as much business as the management expected.

Automatic Equipment Saves Time

From the first day of operation, the owners and managers, C. J. Edwards and W. E. Barton, were hard pressed to get enough trained help to take care of their business. However, all their equipment—cooking, water heating, and space heating—was of efficient, modern design and completely automatic throughout, therefore requiring only a minimum amount of time and attention.

The business of the Plantation Grill continued to grow during the two years and at present, according to Mr. Edwards, the grill has about all the business it can handle in its present building and with its present help and facilities.

"The Rulane service men," said Mr. Edwards, "fill our tanks every week.

This gives us an adequate supply which would last for 10 days through any emergency which might develop.

"In addition, they have always serviced our equipment and kept it operating satisfactorily. In fact, we consider our service equal to that available in the middle of a big city."

Rulane Has Seven Branches

Similar service is being given by the Rulane Gas Co. to communities and towns within a radius of 50 miles of Charlotte and by the company's seven branches including those located in Winston Salem, Bennettsville, N. C.; Norfolk and Newport News, Va.; and Kingsport, Tenn.

An important feature of Rulane service is that company engineers design the equipment for each installation to take care of its particular needs.

For instance, at the Plantation Grill there are gas ranges, baking ovens, and deep-fat fryers; on the counter are gas griddles and hot plates, all of adequate capacity to give efficient, space-saving service. Also, there is an automatic gas water heater and an automatic gas-fired winter air conditioner furnishing heat to the office, dressing rooms, and rest rooms. The dining room of the restaurant is heated by a gas-fired heating unit suspended from the ceiling.

This efficient and modernized service is made possible by the force of commercial cooking and heating specialists which Rulane Gas Co. maintains.

NORGE . . . and Only NORGE . . . Builds L. P. Gas Ranges

Featuring Famous Triple-Acting

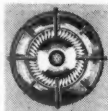
Concentrator Burners

Norge's exclusive Concentrator surface burners assure even flame-spread, provide utmost flexibility and minimize heat waste. Unique 3-way heat-flow design *concentrates* virtually all the flame at the *bottom* of the utensil—none is wasted up the sides!

HOW CONCENTRATOR BURNERS EMPLOY SCIENTIFICALLY DESIGNED THREE-WAY ACTION!



1 FLAME TRAVELS INWARD—Flame emerges from ports on inside of burner—so contrived that the fire travels upward toward the center of the cooking utensil.



2 FLAME SWIRLS—Because burner ports are angle-cut at 45°, flame swirls in a circular motion—thus *concentrating* heat entirely upon the *bottom* of utensil.



3 FLAME MOVES OUTWARD—As the flame swirls in, it is met by heat waves moving up and out—consequently forming a bending action which holds all the heat *under* the utensil!

The extremely economical three-way action of the Norge Concentrator burner has placed this revolutionary new feature among the top performers of the gas range industry. L.P. dealers like its sure-fire selling qualities . . . customers attest to its outstanding record of giving faster, more efficient, thrifter service!

As a result, Norge Concentrator L.P. gas ranges are rated tops as profit-builders for '49! They lead the field in customer-yield! Norge Division, Borg-Warner Corporation, Detroit 26, Michigan. In Canada: Addison Industries, Ltd., Toronto, Canada.



Model BN-357 illustrated. This and 3 other Norge Concentrator gas ranges manufactured for bottled, natural or artificial gas.

OTHER OUTSTANDING FEATURES

- One-piece cooking top and back rail
- One-piece, tank-type oven and broiler
- Oven heat control
- Extra-thick insulation
- Flush-to-Wall design
- New contour styling
- Free-sliding storage drawer

SEE
NORGE
BEFORE YOU BUY

A BORG-WARNER INDUSTRY

Refrigerators • Electric Ranges • Water Coolers • Washers
Electric Water Heaters • Home Heaters • Gas Ranges • Home Freezers

THE TRADE

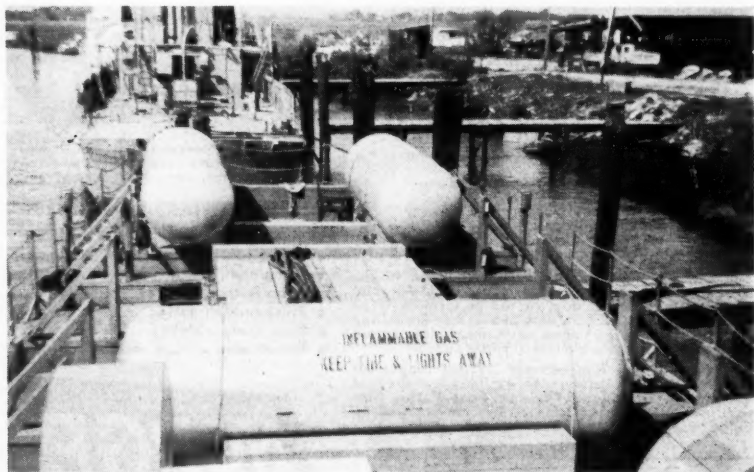
In its move to acquire three wholly-owned subsidiaries of Dresser Industries, Inc.—Bryant Heater Co., Cleveland; Day & Night Manufacturing Co., Monrovia, Calif., and Payne Furnace Co., Beverly Hills, Calif.—Affiliated Gas Equipment, Inc., of Cleveland, has filed an SEC registration for public offering of 40,000 shares of \$3 cumulative preferred \$50 par stock and one million shares of \$1 par common stock. Proceeds will be used for the purchase of the three firms.

Affiliated will obtain another \$4,000,000 through the sale of notes to insurance companies. One million dollars of this will be applied to the pur-

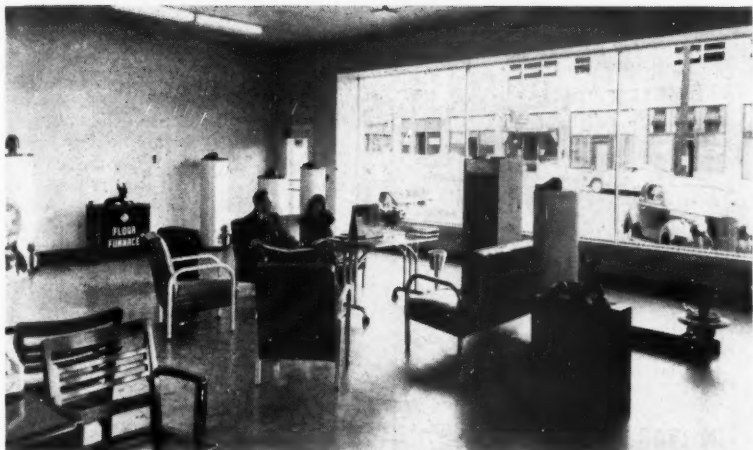
chase of assets of the three companies, \$1,000,000 is slated for capital expenditures, and \$2,000,000 is set for working capital and general corporate purposes.

The Weatherhead Co. has acquired substantially all of the outstanding common stock of The Protane Corp. it is announced by Albert J. Weatherhead, Jr., president of The Weatherhead Co., and H. K. Strickler, president of The Protane Corp.

No merger of the companies is involved and The Protane Corp. and its three subsidiaries will continue their independent operations under



Ocean-going, 1000-gallon LP-Gas tanks for foreign shipments. Manufactured by A. O. Smith Corp., Houston, Texas.



This showroom of Bryant-Johnson-Seier, Birmingham, Ala., supplies six essentials of effective merchandising: (1) complete product display, (2) consumer comfort, (3) show windows that attract, (4) warehouse facilities, (5) ample space for dealer meetings, (6) display of large commercial and industrial models for dealers' uses, that normally would not be displayed in dealers' salesrooms, and (7) a model for dealers to see the various sales tools of Bryant Heater Co. being used to their best advantage.

the same management as heretofore

The Protane Corp. is an old and successful independent distributor of liquefied petroleum gas. It has been in operation since 1923 and has had an unbroken record of profitable operation and growth since its inception. It operates 20 bulk plants located in nine Midwestern and Eastern states, and serves 60,000 customers.

The Weatherhead Co. has five plants located in Cleveland, Indiana, Louisiana and Canada. At the close of the war, as part of a diversification program it commenced the manufacture of fittings, valves, and regulators for the liquefied petroleum gas industry and two years ago it added the manufacture of steel pressure containers for storage and transportation of these gases.

Rheem Manufacturing Co. has been awarded a patent on the most important phase of its new method of manufacturing galvanized containers such as water heater boilers, range boilers, and expansion tanks.

The patent covers the company's unique methods of assembling zinc coated containers after galvanizing, a procedure which governs the company's entire mechanized process of tank manufacture.

What is believed to be a unique record in the annals of American industry was marked in Coatesville, Pa., Dec. 15, when Charles Lukens Huston began his 74th year of continuous service with Lukens Steel Co.

Mr. Huston, grandson of Dr. Charles and Rebecca Lukens, for whom the

TIME FOR AN ACCOUNTING



It is again the season of accounting for the past and planning for the future. So, let us tell you what we have done after three years of operation, and our future plans.

IN 1948 we (1) have revised all our Resident and Home Study texts; (2) provided a "Safety-Service" training program for State and Industry groups; and, (3) inaugurated a Night School for employees of LP-Gas manufacturers and wholesalers.

FOR 1949 we plan (1) improvement of all existing facilities, and (2) continued service in the interest of the industry's safety and profit position—

PLUS providing men trained for better Installation, Service and Sales work. If you are interested in any of these services, indicate same on the coupon below, and mail to us immediately.

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Please send full information concerning:
☐ 30-day Resident Course. ☐ 4-month Resident Course. ☐ Home Study Course.
 Men available for ☐ Installation ☐ Service, ☐ Sales, or ☐ Combination of above three

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company is named, now in his 93rd year, started with the concern on Dec. 15, 1875, as a clerk and book-keeper in its offices. Today, as first vice president, he is still spry of foot and keen of interest, and he walks to his office daily from his nearby home.

Actually, Mr. Huston's association with the steel company reaches 78 years, for in his teens he wheeled coal and helped with other mill chores—and without pay—while he was on summer vacations from school.

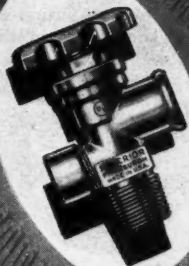
John J. Brandt has been appointed assistant general sales manager of Cribben & Sexton Co., manufacturers of the "Universal" gas range, according to an announcement made by Harold E. Jalass, vice president and general sales manager. Mr. Brandt will continue to be sales promotion and advertising manager, his position previous to his new appointment.



JOHN BRANDT

J. S. Feroe has been elected president of Beacon Petroleum Co., Tulsa, it has been announced by the company's directors, who also announced the re-election of H. R. McFarland as vice president and secretary, and R. E. Bolinger as vice president and treasurer of the firm. E. Q. Beckwith, formerly president of the firm, recently joined the Sid Richardson Gasoline Corp., of Ft. Worth.

Mr. Feroe is well known in the natural gasoline and liquefied petroleum gas fields. He was associated



LP GAS VALVES FITTINGS & ACCESSORIES

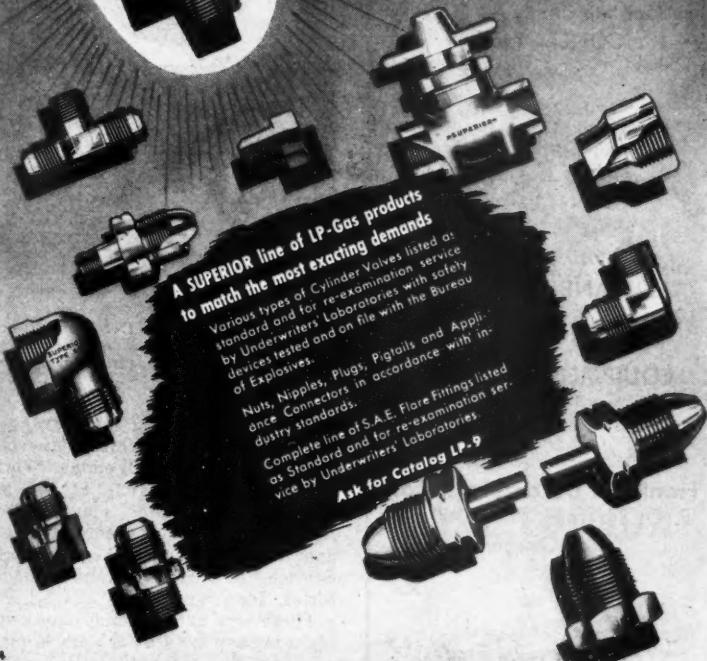
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Nuts, Nipples, Plugs, Pigtails and Appliance Connectors in accordance with industry standards.

Complete line of S.A.E. Flare Fittings listed as standard and for re-examination service by Underwriters' Laboratories.

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Superior Valve and Fittings Co.

1509 WEST LIBERTY AVE. PITTSBURGH 26, PENNA.



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If you require more Butane or
Propane Gas than your present
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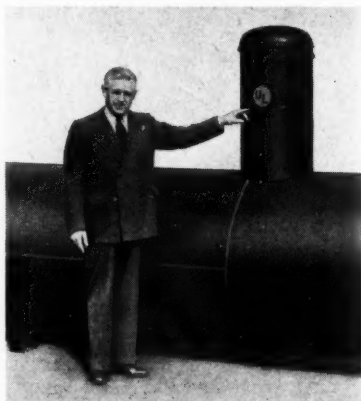
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EQUIPMENT BROKERS**

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P. O. Box 1684, Phone 4-0150
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***"The Industry's Fastest
Growing Service
Institution"***

with Hanlon-Buchanan, Inc., for 14 years, before the organization of the Beacon company, which is engaged in marketing natural gasoline and liquefied petroleum gas and its associated equipment over a nation-wide area, with its headquarters in the Wright Bldg., Tulsa.



W. A. Buehler, president of Buehler Tank & Welding Works, Los Angeles, beside one of his new underground systems.

The accompanying photograph is that of W. A. Buehler, president, Buehler Tank and Welding Works, Los Angeles, with one of his new underground LP-Gas plants. These units are built in accordance with and are listed under Re-examination Service of Underwriters' Laboratories, Inc.

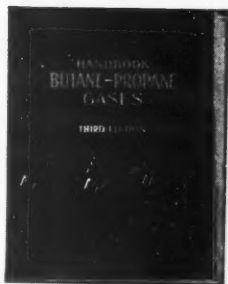
These new underground plants supply a need of LP-Gas dealers in many areas of the country. Built for 200-pound working pressure to meet ASME requirements, the units are fabricated in a full range of sizes.

A feature of these plants is a very heavy curb box which gives extra

HANDBOOK BUTANE-PROPANE GASES

REVISED JUNE, 1947

- Up-to-date technical facts on LP-Gases.
- 352 Pages. Illustrated with Charts, Diagrams and Photographs.



Check this partial list of contents.

INTRODUCTION

- The Progress of the Industry and the History of its Development.
- The ABC of LP-Gas, an Introduction to LP-Gas Operations.

PHYSICAL AND CHEMICAL PROPERTIES

- Properties of the Hydrocarbons in LP-Gas.
- Properties of Butane-Propane Mixtures
- Volume Correction Factors
- Analytical Determination and Testing

PRODUCTION OF LP-GAS

- Natural Gasoline Plants, Recycling Plants, Oil Refineries

TRANSPORTATION AND STORAGE

- Delivery by Truck, Rail, Water, and Pipe Lines
- Storage Tank & Pressure Vessel Design
- Liquid Metering and Pumping Systems

UTILIZATION OF LP-GAS

- Comparative Performance with other Fuels
- Appliance Installation and Testing
- Domestic Applications
- Commercial Applications
- Industrial Applications
- Enrichment, Peak Load and Standby Uses
- A Fuel for Internal Combustion Engines

DISTRIBUTION OF LP-GAS

- Installing and Servicing LP-Gas Systems
- Semi-Bulk Systems
- Bottled Gas Systems
- Gas Utility Service from Central Plants
- Multiple Utility Service from a Central Plant

REGULATIONS

- N.B.F.U. Pamphlet No. 58 (1947).
- Motor Carrier Regulations
- Freight Regulations
- Unloading Tank Cars
- Marine Regulations

APPENDIX

- Products Liability Insurance
- Handy Tables for Field Use
- The Interchangeability of Other Fuel Gases with Natural Gases
- Flame Weeding
- Bibliography
- Glossary of Terms

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Peerless SUSPENDED UNIT HEATERS

Styled for Beauty
Designed for Duty



The smart styling of Peerless Unit Heaters blends perfectly with modern interiors of shops and stores everywhere. . . . The sturdy battle-ship construction and super heating capacities adapts them ideally for rugged industrial and commercial installations.

Peerless Unit Heaters are a complete unit—in one package . . . no loose parts to waste time in installation. All controls are rigidly mounted on the heater at the factory, ready for hanging and connecting to gas and power supply.

Write today for complete descriptive literature.

Peerless
MANUFACTURING CORPORATION
INCORPORATED

LOUISVILLE, KENTUCKY

protection to the fittings. Each size is fitted with B & B multi-valve head, regulator and pigtail.

Instructions for installing the plants, dimensional drawings and prices are available upon request.

J. C. "Jim" Duncan announces the opening of his new LPG equipment business at 921 S. W. Washington St. in Portland, Ore. He will carry a complete line of equipment for LP-Gas dealers in the Northwest.

Mr. Duncan has been operating in Oregon and neighboring states for more than a year. He had until recently represented Pacific Tanks Co. of Los Angeles.

W. F. Rockwell, Jr., president of Rockwell Manufacturing Co., has announced the appointment of L. A. Dixon, Jr., as general manager of the Pittsburgh DuBois division of the company.



L. A. DIXON, Jr.

Concurrent with his appointment Mr. Dixon stated that expansion plans have been formulated to accelerate production in the company's tin meter operations which constitutes the major part of this division's function.

Mr. Dixon started in the engineering department of the Pittsburgh-DuBois Co. and was made executive vice president in 1944. When Rockwell acquired that company in October, 1947, he became the assistant general manager. This division operates plants in DuBois and Sykesville, Pa.

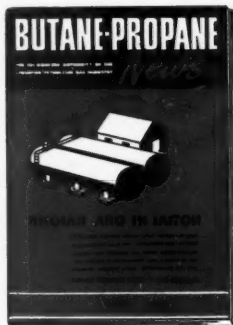
The Rockwell company also has named C. B. Johnson as chief engineer

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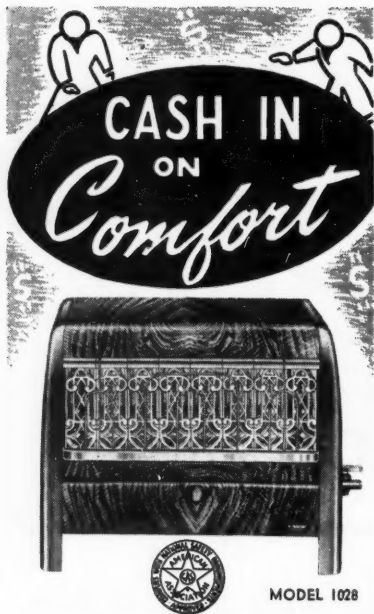
CITY

ZONE

STATE

JANUARY—1949

159



All Premier Gas Heaters are A.G.A. approved for use with L.P. gases as well as natural and manufactured.

NOW—get set for brisk sales this winter with the four great Premier Radiant Gas Heaters. A.G.A. approved ratings range from 16,000 B.T.U. to 32,000 B.T.U.—just right for your market.

Cash in on comfort with these fast-selling, profit-making heaters. Attractively styled—superbly finished in beautiful walnut grain.

Just a few choice dealer and distributor territories available—write for full details today!

**Premier**  
SINCE 1912  
**STOVE COMPANY**

100 South Sixteenth Street Belleville, Illinois

and E. R. Gilmore as director of research for its Pittsburgh Equitable Meter Division. This move is a direct result of the company's expansion program which necessitates the shuffling of key men to cope with the enlarged operations, both in its plants and in the field.



R. C. BREWER



E. W. VOICE

Appointment of three liquefied gas sales representatives in Texas and New Mexico has been announced by

**Warren Petroleum Corp.**

Those promoted to these newly created positions are John O. Thompson, stationed at Fort Worth and handling north and east Texas and southern Oklahoma; R. C. Brewer, stationed at Houston and handling Gulf



J. O. THOMPSON

Coast truck sales, and E. W. Voice, stationed at Midland and handling the west Texas and New Mexico territory. Mr. Thompson and Mr. Voice will be under the supervision of J. T. Bradley of the Tulsa sales

CONFIDENTIALLY The birds who see these sea serpents are "gas-equipped!"

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office while Mr. Brewer will work under the direction of Kenneth T. White of the Houston sales office.

Robert H. Taylor was elected president of **Florence Stove Co.** at a recent meeting of the board of directors to fill the vacancy caused by the death of Edward F. Dobson. Mr. Taylor, who has been vice president in charge of sales and a director of the company, has had wide experience in Florence operations over a period of 16 years.



**ROBT. H. TAYLOR**

He joined the Florence organization in 1932 and his first assignment with the company was as representative in the Midwest sales division. In 1937 he was transferred to the Eastern division of the company in New York City, and over a ten year period, served as division credit manager and eastern sales manager. Mr. Taylor was promoted to general sales manager of the company in 1947 with headquarters at the Gardner, Mass., plant.

**American Car and Foundry Co.** announces the appointment of Frank B. Powers as assistant vice president, production department. Mr. Powers comes to ACF from the Baldwin Locomotive Works of Philadelphia.

R. M. Hoel, sales agent for the **American Car and Foundry**, has been transferred from the Pittsburgh to the New York district office and G. L. Holt has been appointed assistant district manager of the Madison, Ill., plant.



See pages 88 and 89 for MULTI-  
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improvements!

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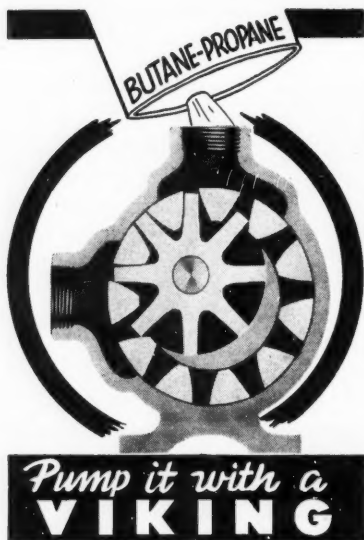
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JANUARY—1949

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Consolidation of the New England and New York divisions under Gordon Hentz, previously division manager in New England, has been announced by Cecil M. Dunn, director of sales, Estate Heatrola division, Noma Electric Corp., Hamilton, Ohio.



GORDON HENTZ

Mr. Hentz's headquarters will be at 55 W. 13th St., New York City.

Mr. Hentz has served for one and a half years as Estate's division manager in New England.

His recent purchase of the nationally known E. A. Bibey Co., 1419 West Liberty Ave., Pittsburgh, Pa., was announced last month by Roy E. Manning.

The Bibey Co. manufactures water heater coils, repair parts and has a competent water heater service department.

Mr. Manning will also act as distributor for the Clayton & Lambert Co., manufacturers of Hoffman water heaters and will distribute other plumbing and heating specialties throughout the tri-state area. He was formerly national sales manager for the Pittsburg Water Heater Co.

Two appointments to key positions in the Stewart-Warner Corp. administrative staff are announced by James S. Knowlson, president and board chairman.

Arthur R. Collins has been appointed general manager of Division III, the company's "South Wind" heating equipment division at Indianapolis, Ind. Mr. Collins, who joined





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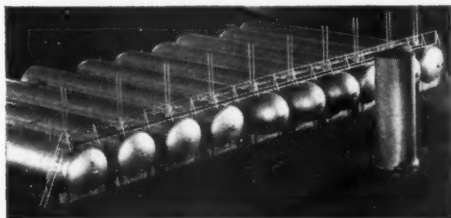
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*(Photo courtesy of United Petroleum  
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Those interested in purchase of bulk Storage Tanks for Propane must consider the following factors: Proper design, Quality of workmanship and Availability and Quality of materials from which they are fabricated. Downingtown's knowledge of design and materials, qualified personnel, checking of welding operations by X-Ray, fabrication to meet A.S.M.E. and National Board PLUS inspection and approval by the Hartford Steam Boiler and Insurance Company PLUS many years of asso-

ciation with sources of supply of raw materials should prove of value to you. The plate situation is critical; therefore, we suggest you anticipate your requirements. May we help you?

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the South Wind division as an engineer in 1942, has headed its manufacturing and engineering activities for the past 16 months.

E. G. Fossum, who has been an assistant to F. A. Hiter, senior vice president of Stewart-Warner, since early in 1948, has been appointed as assistant to President Knowlson. He has been a member of the Stewart-Warner organization since 1926.

The Neptune Meter Co. announces the appointment of George W. Cissna as Southwestern district manager, with headquarters in Dallas, to succeed the late Egmont S. Smith.

Mr. Cissna, who has been with the company since 1930, has in recent years represented the company in the states of Georgia and Florida.

While on a business trip to Argentina, Heyliger Church died suddenly of a heart attack in Buenos Aires, Nov. 13. He was 55 and born in Washington, D. C. He left this country on Oct. 28 for his second trip to South America in the past two months. He had planned to visit Brazil and Venezuela before returning to Cleveland the latter part of November.

Mr. Church joined The Weatherhead Co. in 1936 as sales manager of the aviation division, and was later appointed vice president in charge of export sales for the company.

The A. O. Smith Corp. of Houston, Texas, has made delivery of its first all-welded steel pressure vessels which meet the Interstate Commerce Commission's requirements for the shipment abroad of liquefied petroleum gas. The requirements are contained in "Specification 50" issued by the I.C.C.

The principal requirements of specification 50 are that all of the welds

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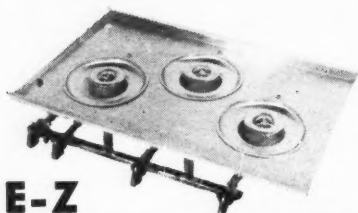


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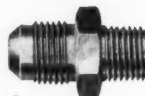
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### HARTWELL COMPANY

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be x-rayed and that the vessels be stress-relieved. Both of these are procedures that A. O. Smith has done for many years in its manufacture of other types of vessels.

The company has made three of the new vessels, each of 1000-gallon capacity. They were made to specification drawn up by the Liqueulux Gas Services, Inc., of Houston. Liqueulux installed all three aboard an ocean-going vessel and is now servicing them regularly with gas.

Charles C. Wight, president of Liqueulux, believes the move is significant because it will permit "semi-bulk" shipments of liquid gas into the foreign market.

The A. O. Smith Corp. has announced several promotions in the eight-state area which is administered by the Houston office. All of the changes have to do with the sale of Smithway domestic automatic storage water heaters, Burkey gas-fired boilers and Smithway liquid gas systems.

William L. Melcher, who has been serving the Maxwell Bros. Supply Co. in Louisiana and Arkansas, will be moved to Dallas, Texas, where he will work with the Russom Gas Appliances Co., of Fort Worth and Dallas, and the East Texas Plumbing Supply Co., of Longview.

Mr. Melcher's former work will be taken over by R. J. Amann, who is being moved from Tulsa, Okla., to Monroe, La.

J. A. Springfield is being moved from the Houston office to Tulsa, and Ben C. Heald is being moved from Dallas to Denver.

